Based on 44 sources

Module Name	Technical Domain	Description	Standards/Regulatory Compliance	Operational Framework Component	Data Metric/Value	Credential Mapping (Inferred)	Source
GENIAC	Military Combat Engineering / AI / Infrastructure Automation	A multi-disciplinary module and flagship initiative (Operation GENIAC) focusing on military-grade logic, research, and technical trade skills. Includes the State Asset Information Management System (SAIMS) for digitizing and automating public infrastructure assets, tactical engineering systems (bridge building, watermanship), and generative intelligence for transformer science and human-machine	SAQA, NQF, MIL-STD, ECSA, POPIA, IFMS, B-BBEE, PSIRA, SABS, DHET, SANDF, SAPS, IEC	Infrastructure Overhaul, Defense Planning, and Cybersecurity (ZTNA, NAC)	Budget: R40,000,000 to R50,000,000,000; R600M investment; R1B revenue target; 75MHz clock speed; 64KB memory; Combat Mass: 30F	NQF Level 6–9 (National Diploma to Master's Degree level); Professional Recognition in Utility Management	[1-8]

		collaboration.					
S.E.E.E.I.S.U.A (Framework)	Urban Energy Governance / Infrastructure Policy	Social Education and Industrial Trade Vocational career module and holistic framework (Strategic, Economic, Environmental, Engineering, Institutional, Social, Utility, Asset). Focused on rural/urban electrification, grid overhaul, intergovernmental energy regulation (South Union Africa), and circular assessment for engineering subjects.	SAQA, NQF, SABS, SANS, ISO 37301, SGB, QCTO, ECB, PSIRA, DHET, NFPA 70-2014, NDP 2030, ERRP, Public Procurement Act (2024)	Grid Infrastructure, Energy Management, and Policy Scaffolding	0.3 to 0.4 kWh/day limit; 13.8kV Primary/4.16kV Secondary; 3750KVA; 3600 kWh annual index; R350B/year public investment target; 87% machine availability	NQF Level 6–10 (National N Diploma to Doctorate in Infrastructure Management); Professional Engineer/Technologist	[1-8]
Madinda Utilities AMI Rollout	Advanced Metering Infrastructure / Electrica	National rollout of DLMS/COSEM-compliant hardware for urban	IEC 62056-5-3, DLMS/COSEM, AFSEC, SABS, NRS 049-2:2024	Industrial Localisation and AMI Manufacturing	0.3-0.4 kWh daily production (SHS); >$ 126M COP24 grant;	Technical leadership in smart grid manufacturing (NQF Level 6)	[7, 9]

	l Engineering	revenue protection, featuring localized manufacturing (two production plants and 13 satellite warehouses).			2,700 direct jobs		
Advanced Electrical Engineering Curriculum	Education Technology / Power Systems	Structured technical training encompassing Advanced Electromagnetic Theory, DSP, Control Systems Design, and Renewable Energy Systems.	NRF, SARAO, ECSA, SAQA ID 90674, QCTO	Curriculum Assessment and Audit-Ready Learning Pathways	360 Credits (NQF Level 6); ICASS Test Weightings: 30% (Test 1), 70% (Test 2)	Academic mapping to National N Diploma and Professional Engineering registration	[7, 10]
PSIRA Compliance and Security Policing	Security Policies and Law Enforcement	Regulation and control of the security occupation in the public/national interest, including the installation of electronic security systems.	PSIRA Act 56 of 2001, SASSETA, LRA	Security Management and Intelligence Infrastructure	30 to 90 days standard investigation period	Professional Security Certification (Grade A, B, C)	[1]
National Trade Portfolio Evaluatio	Security and Education	Comprehensive assessment of trade	QCTO, SAQA, NQF	Work-Based Learning (WBL) / Portfolio of Evidence	2,670 hours (24 months) relevant	NQF Level 6 / Professional Artisan Status	[11]

n	Policy	portfolios including site inspections at utilities (City Power/Eskom) for work readiness.			work experience required		
Embedded Systems and Digital Logic	Educational Technology / Computer Engineering	Introduction to digital system fundamentals, Boolean algebra, logic gates, and algorithmic state machines for microcontrollers.	NQF Level 6, IEEE Standards	Software and Hardware Integration Framework	120 credits minimum	Bachelor of Science in Engineering (NQF Level 7/8)	[1]
Information Management Systems	Education Technology / Security Policy	Systems for tracking student progress, career alignment, and security policy integration using data science.	SAQA, LRA, CCMA, POPI Act	Log Activity and Information Management System	100 MB storage limit; 360 credit points	ICT Support Specialist / Data Scientist (NQF Level 5-7)	[5]
NATED / NCV Integration	Vocational Education Curriculum	Framework combining academic-based (NATED) and practical-based (NCV) systems for holistic engineering	NQF, DHET, QCTO	Blended Learning (Online/Classroom/Workplace)	ICASS Weighting: Test 1 (30%), Test 2 (70%)	National N Diploma (NQF Level 6)	[12, 13]

		education.					
Smart Power Metering Module	Urban Energy Management	Three-phase smart power measurement system utilizing GPRS for remote communication and billing data processing.	IEC 62056, IEC 61850	Data Inventory Management	240 VAC +20%; 0-60A range; 10 kWh energy limit	Electrical Systems Technician (NQF Level 6)	[4]
Industrial Electronics (N5)	Power Control and Signal Processing	Advanced electronic principles including AC theory, power supplies, amplifiers, and transducers.	SANS 10142-1, OHS Act	Technical Calculations and Derivation	80% pass mark; VDC ≈309.6V	Electronic Engineer / Systems Optimizer (NQF Level 6)	[5]
Modicon PLC Configuration	Industrial Automation and Control	Programming and integration of programmable logic controllers for process machine control and variable speed drives.	IEC 17025, SANS Class 0,2	Technological Integration / Digital Transformation	30kA SCCR; 230V AC Coil; 1200 note/Min	Technical Expert / Automation Specialist	[6]
DL SGWD-AI / FACTORY-AI	Smart Grid & Factory Automation	Advanced didactic laboratories and manufacturing simulations combining AI-driven	ISO 9000, IEEE, MODBUS RTU, RS485	Infrastructure Overhaul / Curriculum Strategy	Class 0.2 Accuracy; OEE: 50%	Smart Grid / Industrial Automation Engineer (NQF Level 6)	[2]

		analytics, IoT devices, and electrical networks.					
GENIE (SECURITY / POLICE)	Cyber Resilience / Regulatory Enforcement	Embedded protocols for infrastructure protection, biometrics, and municipal/industrial energy compliance auditing.	PSIRA Grade A–E, MIL-STD, DHET, OHS Act	Intrusion Detection and Industrial Zone Regulation	Security Posture: SAST/DAST metrics; 80% vending compliance	Security Management Professional / Compliance Officer	[8]
Electrical Trade Theory N1-N2	Military Combat and Electrical Engineering	Foundational training in DC theory, wiring standards, and magnetism applied to industrial and security infrastructure.	SANS 10142-1:2024, MIL-STD, IEC	Curriculum Structure / Blended Learning	Pass Mark: 40%; Duration: 3 hours; 30% DC Theory weighting	NQF Level 2 / Trade Test Eligibility	[11]
TeSys™ T LTMR	Motor Management and Control	Motor management controller providing monitoring, protection, and control functions.	IEC 61508, SIL 2, IEC 60364	Logic Solver with Passive Input	4-20mA loop current (3.6mA low to 21mA high)	Technical Systems Operator/Maintenance Engineer	[3]
Matrix-UPS	Power Protection and Distribution	Line interactive uninterruptible power supply for	UL 1778, CSA C22.2, EN 60 950, FCC Part 15	Power fault detection and isolation filter	Efficiency: 93% at 100% load; Overload:	Data Center Infrastructure Specialist	[3]

		protected computer loads.			10 sec at 200%		
Transformer Systems Analysis	Electrical Infrastructure	Calculations and design for substation transformers and medium-voltage distribution networks.	SANS 10142, IEC 60364	Data Inventory	3200 kVA Peak Capacity	Power Systems Technician	[2]
MetBook Operations	Security Sector Policy	Electronic duty book automation and licensing administration for policing and private security sectors.	PSIRA, SASSETA, SAPS	Infrastructure Overhaul	9000V Fence Threshold	Security Licensing Administrator	[2]
Collision Scenario Engine	Simulation / Industrial Safety	Models impact, response, and investigation protocols for infrastructure safety and tactical readiness.	MIL-STD-882	Diagnostic modeling and scenario investigation	Impact diagnostic simulation; RRT algorithms	Safety Engineer / Systems Analyst	[8]
Automated Teller Machine System	Security & Financial Technology	Secure transaction processing system with PIN encryption and database integration for	PSIRA, ISO/IEC 27001	Security Policy Implementation	6.5 Service Charge; 150 Balance; PIN 9343	Security Software Developer (NQF Level 7)	[4]

		auditing.					
Microgrid Optimization Module	Urban Energy Governance	AI-driven optimization for hybrid renewable microgrids and smart grid energy storage technologies.	SABS, Dept of Energy (RSA)	Infrastructure Overhaul / Rural Electrification	0.3 to 0.4 kWh per day SHS; Budget: $4,000,000	Master of Engineering (MSEE)	[6]
Energy: Domestic Systems	Renewable Energy / Electrical Engineering	Mandatory units covering wind turbine systems and solar hot water systems for domestic use.	National Occupational Standards (NOS), SCQF	Curriculum Assessment Strategies	24 SCQF credits; ±3mm tolerance level	Engineering Technician / Renewable Energy Installer	[5]
Drawing Analyse Design System	Engineering & Education Technology	Transdisciplinary framework for technical system analysis through schematic interpretation and fault diagnostics.	SAQA, NQF, ISO 1999	Curriculum Assessment Strategy	12.88 MB File Size; 32.768kHz Crystal Frequency	Trade Theory Certification (NQF Level 4/5)	[4]
Electrical Diploma Validator	Education Technology / Credentialing	Visual Basic automation suite used for validating N4–N6 credentials and diploma authenticity	SAQA, DHET, QCTO	Credential Dashboard with NQF Tracking	Automation logic for 360 credits validation	Academic Registrar / Assessment Moderator	[8]

Schneider Home Certification	Home Energy Management	. Training for installing and commissioning home energy management systems including inverters.	NABCEP	Commissioning with eSetup App / Smart Panel App	80% passing score required	Professional Installer Certification	[3]
Traction Substations (Type 1 & 2)	Railway and Urban Transportation	Facilities responsible for supplying trains with electrical energy.	Not in source	Operational Management (Monitoring and Control)	Manage ~75% of railway electricity; 25kV AC / 600V-3.3kV DC	Electrical Infrastructure Project Manager	[3]

[1] 173423_course ciriculum total course thesis alumine(1).docx
[2] career drawin nated Request an intellectual property (IP) licence _ Metropolitan Police.pdf
[3] 278582_thesi project book , final engineerin tshingombe , time table allocation job cost.docx
[4] Doc12 design analyse investigate engineering tshingombe(6).pdf
[5] 417959_Career center final rwiten scie bono dhet nated , peace tshingombe faciltator note(1).pdf na.docx final.docx
[6] 359173_Proposal of thesis content 2 final research(1).docx
[7] Career Education Didactic Report.docx
[8] CAREER 36 EDUCATION ACADEMIC SECURIRTY SAFETY POLICY ENGINEERING TECHNICAL VS POLICY COMPAGNY REGULATORY FRAMEWORK EDUCATIN MANAGEMNT SYSTEM.docx
[9] South_Africa_Energy_Engineering_Framework.pdf
[10] careee 30 tshingombe.pdf2.pdf
[11] careee 30 tshingombe.pdf
[12] 232823_Proposal of thesis content final fund.docx
[13] career 29 education materiaux didactic report award c

Date	Institution / Platform	Item / Module	Sale Price	Amendment	Final Cost	Award / Certificate	Status	Notes / Integration Points	Source
202	Atlantic	MBM302	$450.0	Researc	$300.	Master of	Accept	Portfolio	[1]

5-10-08	International University	Master Thesis Review	0	h Grant Applied (-$150.00)	00	Engineering Systems – Thesis Accepted	ed	artifact submitted to LMS and AIU Library	
2025-10-08	NRF / AIU	MATLAB Research License	R12,000.00	NRF Grant Applied (-R8,000.00)	R4,000.00	IJETR3156 – Paper Accepted	Accepted	SCQF/NQF Level: 8. Portfolio artifact submitted to NRF dashboard and AIU Library	[1]
2025-10-08	NSF / F1000Research	Open Access Publication Fee	$1,200.00	NSF Grant Applied (-$800.00)	$400.00	F1000Research Poster Accepted – Helicases and Translocases	Accepted	Publication indexed in PubMed Central and linked to AIU thesis	[1]
2023-Present	Atlantic International University (AIU)	Doctorate in Engineering (Specialist Infrastructure)	$35.00	Not in source	Not in source	Doctorate in Engineering (In Progress)	Pending	Focus on infrastructure, sustainability, and credential reform	[2]
2025-10-08	ECSA / CCMA / Home Affairs	Professional Engineering Registration	R1,500.00	Academic Grant Applied (-R500.00)	R1,000.00	Certificate – Registered Professional Engineer	Record submitted	Record submitted to CCMA dispute resolution log and Master Court archive	[1]
Not in source	SAQA / NATED	National N Diploma in Electrical Engineering	Not in source	Not in source	Not in source	National N-Diploma (N4–N6)	Audit Readiness	SCQF/NQF Level 6; ID: 90674; Includes WA code competency mapping for ECSA registration	[2]

2012-07-01	Cape Peninsula University of Technology / SAQA	Doctor of Technology: Engineering: Electrical (ID 78780)	Not in source	Replaced by ID 97019	Not in source	Doctoral Degree	Passed End Date (2014-12-31)	SCQF/NQF Level 10; 240 Credits; HEQSF sub-framework	[3]
2025-10-08	Schneider Electric / Eaton	EcoStruxure Smart Panel	R12,000.00	Club Clipsal Loyalty Credit (-R2,000.00)	R10,000.00	Certificate – Energy Management Compliance	Record submitted	Record submitted to GitLab audit log and Azure DevOps billing portal	[1]
2025-10-08	Eaton Power Advantage	9PX UPS System Sale	R18,000.00	Partner Discount (-R3,000.00)	R15,000.00	Certificate – Power Management Fundamentals	Record submitted	Record submitted to LMS and GitHub audit log	[1]
2025-10-08	City Power Johannesburg	Smart Meter Installation – Industrial Zone 3	R3,200.00	Eskom Loadshedding Adjustment (-R830.00)	R2,370.00	Certificate – Energy Efficiency Compliance	Audit readiness	Record submitted to municipal audit portal and SCQF/NQF compliance dashboard	[1]
15 Oct 2025	National Science Foundation (NSF)	NSF Pitch #00110596	$1,000.00	-$250.00	$750.00	Pending Review	Audit Ready	Linked to GitHub/GitLab audit sheet; Power Management focus	[4]
2025-09-01	Ministry of Higher Education and Research (France)	BTS Electrotechnics (Electrotechnique)	Not in source	Not in source	Not in source	Brevet de Technicien Supérieur (BTS)	Registration start date	EQF Level 5; NSF Codes 227, 250, 255; RNCP41007; Smart electrical installations	[3]
202	Govern	Decree	Not in	Modifie	Not in	Official Decree	Legally	Articles	[3]

0-03-17	ment of France (Journal Officiel)	defining BTS Electrotechnique delivery conditions	source	d 2023-01-05	source		active	D643-1 to D643-35-1; OQSF compliance	
2025-10-08	GitHub	Reward Model Deployment – PRM	$120.00	Open Source Credit (-$40.00)	$80.00	Contributor Badge – RewardHub	Record submitted	Record submitted to GitHub audit log and Archive.org metadata index	[1]
2024-11-20	Schneider Electric	Masterpact MTZ Substitution & Technical Guide	Not in source	Not in source	Not in source	Technical Guide	Audit trace enabled	Size: 20.7 MB. Used for mapping legacy-to-modern product equivalence and trade test validation	[5]
2021	Schneider Electric	Industrial Automation & Sustainability	Not in source	Not in source	Not in source	LMS-integrated module	Completed	Integrated with LMS platforms for sustainability training	[2]
21 May 2025	Digital Factory / Schneider Electric	Altivar Machine Professional Certification (Version 23.0)	Not in source	Not in source	Not in source	Altivar Machine Professional	In Progress	30+ hours curriculum; includes ATV320/340 and ATS480 functions	[4]
Not in source	Schneider Electric University	Professional Energy Manager (PEM)	Not in source	Not in source	Not in source	Professional Energy Manager	In Progress	68h 15min curriculum; 91 modules including HVAC and Energy Audits	[4]

14 Jan 2024	Industrial Automation Academy / Schneider Electric	Easy Lexium 16 Servo Drives & BCH Servo Motors	Not in source	Not in source	Not in source	Not in source	In Progress	eLearning module; covers motion and HMI	[4]
2024-2025	SQA	Electrical Engineering Principles (J6CW 47)	Not in source	Not in source	Not in source	SCQF Level 7	Pilot (NextGen HN v4.0)	24 Credit Points. Outcomes include DC Principles and Three-Phase Principles	[6]
2023-05-16	SQA	AH Engineering Science 2023 (X823/77/11)	Not in source	Not in source	Not in source	Advanced Higher	Audit-ready	Topics: Project Planning, Amplifier Design, Solar Heating. Worksheet required	[6]
2025-05-16	SQA	AH Engineering Science 2025 (Paper X823/77/11)	Not in source	Not in source	Not in source	Advanced Higher	Audit readiness	75 marks total. Includes modules on Project Management and Structural Analysis	[6]
2024	SQA / DHET	Engineering Trade Theory (N1-N2)	Not in source	Not in source	Not in source	Trimester Evaluation	Completed	Mapped to SANS 10142-1 standards; 100 hours total work schedule	[2]
2019-12-	SAQA (South African	National Certificate:	Not in source	Replaced ID 48475	Not in source	National Certificate	Passed End Date	SCQF/NQF Level 03; 133 Credits;	[3]

05	Qualifications Authority)	Electrical Engineering (ID 72051)					(2023-06-30)	Mining Specialization (ID 72071)	
2025-10-08	Alison Learning	Diploma in Electrical Engineering	$124.46	October Sale Discount (-25%)	$93.35	CPD Accredited Diploma – Electrical Engineering	Record submitted	Record submitted to SCQF/NQF dashboard and GitHub credential repository	[1]
Not in source	ALISON	Professional Certification Journey	Not in source	Not in source	Not in source	Certification Modules	Completed	Digital credentialing for lifelong learning scaffolding	[2]
2025-10-08	Sci-Bono Discovery Centre	Electrical Wiring Kit	R450.00	DHET Grant Applied (-R150.00)	R300.00	Certificate – Basic Electrical Safety	Portfolio artifact submitted	SCQF/NQF Level: 4, WA Code: EA2. Portfolio artifact submitted to LMS	[1]
2020	Sci-Bono / DHET	Facilitator Training & Curriculum Mapping	Not in source	Not in source	Not in source	DHET-accredited certification	Completed	Focus on educator training and curriculum design	[2]
2025-10-08	St Peace College	Engineering Drawing Textbook	R350.00	Academic Grant Applied (-R100.00)	R250.00	Certificate – Fundamentals of Electrical Systems	Submitted for moderation	SCQF/NQF Level: 5. Portfolio artifact submitted for moderation	[1]
2025-10-08	Shoprite / CNA / Elektor	Elektor Electronics Starter Kit	R450.00	Subscriber Discount (-R90.00)	R360.00	Certificate – Electronics Fundamentals	Record submitted	Record submitted to GitHub credential repository and SCQF/NQF	[1]

								dashboard	
2025-10-08	SASSETA / CCMA	Labour Law Training Module	R1,200.00	UIF Credit Applied (-R400.00)	R800.00	Certificate – Workplace Dispute Resolution	Record submitted	Record submitted to MERSETA dashboard and Home Affairs compliance log	[1]
2015-05-18	QCTO	Electrical Engineering N4–N6	Not in source	Not in source	Not in source	NATED Accreditation	Accredited (Exp: 2020-05-18)	Provider: Academy of Training and Development. Accreditation No: NATED/15/0417	[7]
2025-10-08	Metropolitan Police UK	Use of CCTV footage for research	£500.00	Academic Research Waiver (-£200.00)	£300.00	Publication Approved – F1000Research	Approved	IP license granted under non-commercial clause; record submitted to ORCID	[1]
Not in source	JGU / Public Policy Program	MA Public Policy	₹3,00,000.00	Not in source	~$3,400.00	Master of Arts	Audit Readiness	Tracks: Data Analytics / Policy Design. Integration with SQL and dashboard logic	[7, 8]
2024-10-04	GitHub / Microsoft Learn	Accelerate app development by using GitHub Copilot	Not in source	Not in source	Not in source	Module Assessment Passed	Complete (100% Score)	Duration: Various. Part of APL-2007 path. Integration with Visual Studio Code	[5, 7]

2024-11-16	Microsoft Learn	Build custom agents for Microsoft Teams	Not in source	Not in source	Not in source	Learning Path Complete	Complete	Focused on business needs environment. Logged in Training Transcript	[5, 7]
2023	Microsoft	Digital Credentialing & LMS Strategy	Not in source	Not in source	Not in source	Portfolio-ready credential	Completed	Strategic integration for digital portfolio scaffolding	[2]
15 Oct 2025	PRM	Engineering Career Discovery Journey: Experimental, Theoretical, Practical	Not in source	Not in source	Not in source	Transcript Report	Completed	Integrated with SAQA, BICSI, CPD; includes business and digital skills	[4]
2018-08-01	NIMI (National Instructional Media Institute)	Electrician 1st Year (Volume I) Trade Theory - NSQF Level 5	₹285.00	Not in source	₹285.00	Not in source	Published	NSQF Level 5; Electrical Sector; Semester Pattern	[3]
Not in source	Burger Huyser Attorneys	Complete Engineering Patent Filing (South Africa)	R25,000.00	to R30,000.00	R30,000.00	Patent Grant	Service pricing	Legal protection for 20 years; excludes PCT international filing fees	[3]
2025-11-03	Open Source / Community Texts	Design Career 10 Application Trade Drawing Orthopedagogie Material Didactic	Not in source	Not in source	Not in source	Creative Commons BY-NC-SA 4.0	Published	Size: 119.7 MB. Grade 10 career scaffolding. Integrated via UserForm1 90000002	[5]

		Lesson Plan							
2024-10-26	F1000Research	Career drawing total programming: Analysis, Design, Investigation	Not in source	Not in source	Not in source	DOI: 10.7490/f1000research.1120368.1	Published	Version 1; not peer reviewed. Includes PCB implementation and Visual Basic	[5]
18 Nov 2025	IEC Webinar	Advancing Standards for Digital Authenticity	Not in source	Not in source	Not in source	Webinar Insight Log	Scheduled	Focus on deepfakes and provenance tracking; integration with dashboards	[8]
2026-03-15	SQA	Community Garden Volunteering Day (Responsible Business Task)	Not in source	Not in source	Not in source	Work Experience Task	Scheduled	Place: Glasgow Hidden Gardens. Risk assessment via SQAForm	[6]
Not in source	Lucas-Nülle	UniTrain-I: DC Technology Course (SO4204-4D)	Not in source	Not in source	Not in source	Course Certificate	Audit Ready	Multimedia training system; USB Interface; includes 3 test cards	[3]
18 Apr 2024	Underwriters Laboratories (UL)	Electrical Arc Flash Awareness	Not in source	Not in source	Not in source	Not in source	In Progress	Course code: GSCHSES0001004; Basic level safety training	[4]
Not in source	ISC2 / Credly	Certified in Cybersecurity (CC)	Not in source	Not in source	Not in source	Digital Badge	In Progress	Linked to Azure DevOps and GitHub	[4]

								Copilot modules for audit	
Not in source	Salesforce / Trailhead	CRT101 Salesforce Certified Administrator	Not in source	Not in source	Not in source	Salesforce Certified Administrator	In Consideration	Integrated with Agentforce topics and career discovery dashboards	[4]
2017-01-01	Canal-U / Callisto / Urfist	Tutorial on invention patents - Module 8 Introduction	Not in source	Not in source	Not in source	Not in source	Online (2022-05-13)	Covers European patents (EP) vs PCT; Creative Commons CC BY-NC-SA	[3]
2016-10-06	French Ministry of National Education	Circular No. 2016-133: Delivery of certificates for competency blocks	Not in source	Not in source	Not in source	Attestation of competency blocks	Official Bulletin No. 36	Law No. 2014-288; modularization of diplomas; RNCP integration	[3]
14 Jan 2024	Digital Factory / Schneider Electric	Robotics (Test)	Not in source	Not in source	Not in source	Not in source	Failed	Score: 44% (passing 70%); Course code: INDTECT0001000	[4]
14 Jan 2024	Buildings Business 1 / Schneider Electric	Physical Infrastructure Management Basics Quiz	Not in source	Not in source	Not in source	Not in source	Failed	Score: 30% (passing 80%); Course code: BLDSALE1234034	[4]
01 Sep 2025	F1000Research	Career Discovery and Mentoring	Not in source	Not in source	Not in source	Not in source	REJECTED	Document submission; Author: Tshingomb	[9]

		Framework for TVET							e Tshitadi	
17 Apr 2025	F1000Research	Case Report: Master Energy Rural Career Experimental Engineering Electrical	Not in source	Not in source	Not in source	Not in source		REJECTED	Article submission; Author: Tshingombe Tshitadi	[9]

[1] Career 11 asssessment eva;uation objective asssign copilote didactic end of should able design application trade orthopedagogie material didactic lesson plan2.docx
[2] career discovery overview your Alison learning journey a2 and nated .docx
[3] careeer 18.1 drawig material didactic autopedagogie panel teach learning copilote.docx
[4] Career 13 application trade education orientation guide education actuary and methode resaerch library join info technologie project deployment database plan.docx
[5] careeer 20 drawig material didactic autopedagogie panel teach, psychometri fundamental pedagogie phenomen.docx
[6] Career 15 application trade education orientation guide education actuary and methode resaerch library join info techno.docx
[7] career 21 application trade technical documentation exper rwiten assessment career librarie mentoring Review reference bibliographic.docx
[8] careeer 23 ,disciplin didact education labour ,social legislation low policy.docx
[9] F1000Research Submissions and Rejections

Section/Topic	Description	Field/Discipline	Qualification/ Award	Institution	Outcome/Requirement	Source
Electrical Engineering (N1–N6)	Comprehensive curriculum covering Electrical Trade Theory, Industrial Electronics, Electrotechnics, Power Machines, and Engineering Science. Includes	Electrical Engineering	National N Diploma / N1–N6 Certificates	St Peace College / DHET / SAQA	Completion of ICASS, ISAT, and external national examinations; NQF Level 6 (360 credits) and 18–24 months practical experience.	[1-11]

	AC/DC machine theory, transformers, and industrial electronics modules.					
Labour Relations & CCMA Rulings	Processing of labour disputes, unfair dismissals, and conciliation/arbitration under the LRA. Handles rescission rulings (Section 144), enforcement of awards (Section 143), and military arbitration.	Labour Relations / Law	CCMA Award / Settlement Agreement / Rescission Ruling	CCMA / Labour Court / ELRC / SANDF	Settlement of jurisdiction referrals, certified awards, or variation orders; issuance of awards within 14 statutory days.	[1-3, 6-8, 11-21]
SAQA Foreign Qualification Evaluation	Policy and criteria for the recognition of foreign school-leaving and higher education qualifications within the South African NQF.	Educational Policy / Regulatory	SAQA Evaluation Certificate / Tracking ID: 2403110060003192	SAQA (South African Qualifications Authority)	Compliance with NQF Act 67 of 2008; recognition limited to documents issued by official national examination bodies.	[1, 2, 7-9, 13-15]
Advanced Electromagnetic Theory	Graduate-level study of Maxwell's equations, field theory, electrostatics, magnetostatics, and wave propagation using analytical and computational methods.	Electrical Engineering	Master's Degree / Doctorate (Specialist)	Atlantic International University (AIU) / University of Buea	100% grade achievement; ability to solve boundary condition problems and simulate electromagnetic fields.	[7, 10, 12, 20, 22, 23]
Madinda Utilities AMI	National rollout of Advanced Metering	Utility Engineering /	Professional Project Implementation	Madinda Utilities / DTIC /	DLMS/COSEM compliance; revenue	[10, 23, 24]

Rollout	Infrastructure (AMI) systems across 186 municipalities, including manufacturing and satellite warehouses.	Infrastructure		SABS / Eskom	protection and reduction of non-technical losses via automated load management.	
Drawing Analysis & Design System	Transdisciplinary framework for analyzing and designing technical systems through schematic interpretation, flow diagrams, and fault diagnostics.	Engineering Drawing / EdTech	WA-coded workplace competencies / Portfolio cornerstone	SAQA / Atlantic International University (AIU)	Integration of drawing logic into LMS modules and assessment rubrics aligned with NQF descriptors.	[3, 13, 16]
AI Fluency & Robotics	Modular programs covering AI basics, Generative AI, Responsible AI, and didactic frameworks for PLC-controlled motor automation.	Artificial Intelligence / Automation	6 AI Certifications / Technical Certification	Sci-Bono ICT Academy / Microsoft / De Lorenzo S.p.A.	Completion of 44 videos (5 hours); development of solutions for anomaly detection and process optimization.	[8, 13, 14, 25]
Vertical Farming & Urban Agriculture	Course exploring the intersection of vertical farming, synthetic biology, and genetic engineering for sustainable food production.	Agricultural Tech / Synthetic Biology	Master's Degree	Atlantic International University (AIU)	Practical skills to design and implement urban farming systems leveraging biosystems.	[3, 13, 16]
Mining Qualifications Authority (MQA)	Skills development in the mining and minerals sector, focusing on	Mining Engineering	Artisan Status (Boilermaker, Diesel Mechanic, etc.)	MQA / DMR	Facilitate accreditation and workplace experience under the Skills	[3, 6, 8, 14]

	artisan development in scarce skills.				Development Act 29.	
Security Services & PSIRA Compliance	Accreditation, operational grading, and syllabus for private security service providers and guard programs.	Security Science	PSIRA Grade A–C / Supervisor	PSIRA / SASSETA	Successful completion of unit standards, SAPS criminal record clearance, and OHS risk assessments.	[2, 4, 13, 14]
Electrical Installation & Standards	Technical specifications for low-voltage installations, voltage drop limits, and circuit breaker ratings.	Electrical Engineering	Certificate of Compliance (CoC)	SABS / SANS / Dept. of Labour	Adherence to SANS 10142-1 (Wiring of Premises) and OHSA safety codes.	[1-3, 9, 12, 21, 26]
Power Generation & Substation Systems	Study of thermal, hydel, and solar power plants; includes component identification (CT/PT, breakers, alternators).	Power Engineering	NSQF Level 5 Competency	NIMI / ITI / St. Peace College	Ability to draw single-line diagrams and interpret technical specifications for transmission-grade deployments.	[1, 9, 27-29]
Control Systems Design	Modeling (transfer function, state-space), stability analysis, LQR, and Kalman filters using MATLAB/Simulink.	Electrical Engineering	Postgraduate / ECSA Aligned	University of Pretoria / Purdue / AIU	Design of performance-oriented controllers; integration of state-space and frequency-domain methods.	[10, 23]
Digital Signal Processing	Advanced DSP transforms (DCT, KLT, wavelets), adaptive filtering (LMS, RLS), and multirate processing.	Electrical Engineering	Postgraduate / NQF Level 7 Aligned	NIT Warangal / Unisa / AIU	Analyze discrete signals and implement adaptive filtering via MATLAB simulations.	[10, 23]
Digital	Integration of	Digital	Doctorate in	Atlantic	Creation of audit-	[30]

Systems & VBA Automation	VBA automation for student records, engineering calculations, and PLC simulation logic.	Systems	Engineering (Candidate)	International University (AIU)	ready documentation and automated fault analysis tools for curriculum reform.	
Engineering Project Specification	Technical parameters for power meters, communication interfaces, and surge protection in facilities.	Electrical / Defense Systems	Unified Facilities Guide Specs	Department of Defense / SANDF / Eskom	Compliance with MIL-STD-462D, IEC Class 0.2 accuracy, and identifier 240-61268959.	[2, 7, 14, 29]
Electronic Practice & Technical Training	Hands-on workshop exercises for control panel wiring, motor drive commissioning, and soldering.	Vocational Training	NSQF Level 5 / Module 1-4	NIMI / SAQA / DHET Framework	Portfolio of Evidence (PoE) including wiring diagrams, fault logs, and 525 hours of training.	[2, 6, 9, 27]
Biomedical Engineering Laboratory	Design, manufacture, and repair of medical equipment using De Lorenzo didactic systems.	Biomedical Engineering	Professional Competency	De Lorenzo S.p.A.	Understanding sensors converting ion flows into electrical currents; alignment with trade test units.	[25, 31]
Supply Chain Management & Traceability	Integration of software engineering, blockchain, and IoT for supply chain digitalization.	Supply Chain Management	Master's Degree	Atlantic International University (AIU)	Implementation of security and privacy in supply chain software via real-world case studies.	[4, 5]
Mathematics & Engineering Calculus	Critical analysis of rates of change, limits, binomial expansion, and system dynamics.	Mathematics	Mathematics N4	Not in source	First and second derivatives for optimization; calculation of torque and voltage inductance.	[5, 17]
Technical	Formal	Engineering	Evidence	Schneider	Technical	[18,

Expert Assessment (TEX)	diagnostic pathway for evaluating inoperative electrical products.	Diagnostics	artifacts	Electric	assessment of electrical product failure for NQF alignment.	19]
Industrial Automation & Modicon Integration	HVAC and automation control systems using Modicon controllers and NTC sensors.	Industrial Automation	Project-Based Competency	Schneider Electric	Design of modular control architectures with End-of-Life (EOL) component management.	[29]
ICT & Technical Skills Academy	Training for youth in CCNA, Linux, IoT, and Python Essentials.	ICT / Computer Science	Certiport Expert (Office Suite)	Sci-Bono ICT Academy	Accredited programs in End User Computing and System Support.	[14]
Psychometric Grade Rank Calculation	Weighted score calculation based on cognitive ability (40%), personality (30%), and integrity (30%).	Psychometry / HR	Certified Evaluation (CPER)	SARS / SARB / 9 LINKS	Benchmarking for career readiness; variance gate ≤10; mean score ≥25.	[32]
Autotronics Training	Training panel representing the operation of engine ignition components.	Automotive Engineering	Vocational Skill Certification	De Lorenzo S.p.A. / Northlink College	Ability to troubleshoot electronic ignition control systems.	[31]
Applied Policing & Crime Resolution	Investigative techniques, evidence handling, and web-based crime management systems.	Law Enforcement	National Diploma (NQF Level 6)	ST Peace College / Samara Police	Practical assessment (70%) and theory (30%); automated data storage for crime records.	[5, 15, 16]
Voltage & Component Calculations	Calculation formulations for $V(t)=C1 \int i(t)dt +V0$ and transformer impedance $Z=R+jX$.	Electrical Engineering	National Diploma / NATED	City Power / St Peace College	Verification of calculation accuracy and adherence to IEC/SANS voltage drop limits.	[3, 16, 26, 30]
Renewable	Theoretical and	Renewable	National 5	SQA /	6 SCQF credits;	[17,

Energy: Wind & Solar	practical understanding of domestic wind turbines and PV installation.	Energy	Skills / N6	Schneider Electric	compliance with IEC 61115-1-2 and SANS 10142-1.	26]
Asset Management Automation	Digitization of infrastructure using the State Asset Information Management System (SAIMS).	Infrastructure Management	Operation GENIAC Framework	DPWI / National Treasury	Cloud-native architecture; real-time visibility and risk-based management.	[10]
NATED N1–N3 Phase-Out	Discontinuation of NATED Report 191 N1-N3 programs due to NQF misalignment.	Technical Education	NATED N1-N3	DHET	Programs ceased as of 1 January 2024; articulation to N4 Engineering Studies.	[4, 17]
Clean Energy Technology	Ecotechnology applications focusing on solar, wind, bioenergy, and geothermal systems.	Renewable Energy	Masters / Doctoral Module	Atlantic International University (AIU)	Evaluation of ecological and social implications of energy projects.	[23, 30]
Urban Water & Waste Management	Sustainable planning, water treatment, and resource recovery infrastructure.	Environmental Engineering	Master's Degree	Not in source	Skills to address population growth and climate change challenges.	[3, 13]
Public Administration Legal Studies	Constitutional law, administrative ethics, and public safety laws in the public sector.	Public Law	Master's Degree	Not in source	Understanding of legal compliance in crisis management.	[3, 13]
Information Management System (IMS)	Modular system for secure registration and biometric validation using Visual Basic.	Software Engineering	Not in source	Not in source	Secure data handling and audit-readiness aligning with national standards.	[33]
Cyber	Introduction to	Information	Diploma	Alison	Define key	[15]

Security Fundamentals	cybersecurity elements, attack techniques, and risk management.	Technology			elements of cybersecurity and risk management principles.	
Specialist Engineering Infrastructure	Advanced power system analysis, high voltage engineering, and smart grids.	Electrical Engineering	Doctorate (PhD)	Atlantic International University (AIU)	Design and management of electrical infrastructure projects.	[5, 13, 16]
SARAO Engineering Scholarships	Scholarship application for Bachelor in Electrical and Electronic Engineering Technology.	Radio Astronomy	Bachelor/Diploma	SARAO	Support for MeerKAT and SKA infrastructure.	[18, 19]
Piling Design & Construction	Technical specification for driven cast in situ piling projects.	Civil/Structural Engineering	Not in source	PWC Town Project Team	500 m/day production rate; compliance with ECSA and ISO 90000.	[8]
Intellectual Property (IP)	Registering inventions and managing IP claims with metadata for digital preservation.	Legal / IP	IP6 / Legal Depot Number	Metropolitan Police / Elektor	Validating authorship; protection status via legal depot numbers.	[33]
Dementia Care	Training on caregiving skills specifically for dementia and Alzheimer's patients.	Health Science	Certificate	Alison	Define and differentiate forms of dementia and stages of Alzheimer’s.	[15]

[1] Career11tf discovery job trade memo lecture learn note(2).pdf
[2] Career11tf discovery job trade memo lecture learn note.pdf
[3] career drawin nated Request an intellectual property (IP) licence _ Metropolitan Police.pdf
[4] thesi project book , final engineerin tshingombe , time table allocation job cost-1.pdf
[5] 278582_thesi project book , final engineerin tshingombe , time table allocation job cost.docx
[6] careeer 18.1 drawig material didactic autopedagogie panel teach learning copilote.docx
[7] 359173_Proposal of thesis content 2 final research(1).docx
[8] Career experience discovery tshingombe tshitadi.pdf
[9] careeer 19 drawig material didactic autopedagogie panel teach.docx
[10] Career Education Didactic Report.docx

[11] careee 30 tshingombe.pdf2.pdf
[12] 173423_course ciriculum total course thesis alumine(1).docx
[13] career drawin nated Request an intellectual property (IP) licence _ Metropolitan Police.pdf
[14] Career experience discovery tshingombe tshitadi, ip license.pdf
[15] total career cpd continue nated framework qualification.docx
[16] Doc12 design analyse investigate engineering tshingombe(6).pdf
[17] 417959_Career center final rwiten scie bono dhet nated , peace tshingombe faciltator note(1).pdf na.docx final.docx
[18] career3 discovery overview RNF AIU NSF learning journeyand nated (1).pdf
[19] career3 discovery overview RNF AIU NSF learning journeyand nated .docx
[20] 232823_Proposal of thesis content final fund.docx
[21] career 29 education materiaux didactic report award certificate prize archfile assessent.docx
[22] Copilot_20251215_134719.png
[23] Career Education Didactic Report.pdf
[24] Career Education Didactic Report.docx
[25] careeer 17 drawig material didactic autopedagogie panel teach learning copilote.docx
[26] Career9f discovery job trade memo lecture learn note.pdf
[27] careeer 23 ,disciplin didact education , assessment education , educ theory portofolio, educat investigation , experimental , education engineering system master , edcatio publish ,educat neural ,pc.docx
[28] trade certificate license marks electrical theoretical practic form tshing.pdf
[29] career discovery overview your SCHEINER EATON , SICO, journey and experimental framework for career development.pdf
[30] Career10f discovery job trade memo lecture learn note.pdf
[31] copy refferall lab iot projet drawing tshingombe analyse.pdf
[32] careeer 20 drawig material didactic autopedagogie panel teach, psychometri fundamental pedagogie phenomen.docx
[33] data programm wizar d total career project ip license certificate copy license copyrith legal depo arch authentica Request an intellectual property (IP) licence _ M

Based on 50 sources

Student/Applicant Name	Institution/College	Qualification/Course Title	NQF/N-Level	Document Type	Evaluation/Application ID	Subject Outcomes (Inferred)	Status/Outcome	Source
Tshingombe Tshitadi Fiston	St Peace College	National N-Diploma: Engineering Studies: Electrical Engineering	N4-N6 / NQF Level 6	Diploma Application Documents / Portfolio of	2100002023812 / 90674 / 90643 / 20191130002 / 202001305040	Electrotechnology, Industrial Electronics, Power Machines, Electrical Trade	Under Investigation / Pending Evaluation / Awarded	[1-13]

				Evidence / Academic Transcript		Theory, Advanced Power Distribution, System Engineering Process, Technical Drawing, Numerical Operations, and Industrial Automation Control Systems.		
Tshingombe Tshitadi Fiston	SAQA (South African Qualifications Authority)	Foreign Qualification Evaluation (DRC Diplome d'Etat / UNIKIN / ISPT Kinshasa)	NQF Level 4 - 7 (Equivalence claimed)	Foreign Transcript / Certificate / Evaluation Appeal	90674 / 201911130002 / 71638 / Incident #1626485 / Enquiry 9370 / ref:_00D205o40._5004JYEzA3	Mathematics, Informatics, Applied Science, Education Technology, Electrotechnology, Electromechanics, and General Education requirements.	Non-compliant / Does not meet SAQA standards / Under Review	[1-3, 7, 10, 12-15]
Tshingombe Tshitadi Fiston	St Peace College	National Certificate: Engineering Studies (Electrical)	N1-N4 / NQF Level 2-4	Academic Transcript / Statement of Results / CHIETA	2004007064381 / COM182609001 / 67109 / 67375 / 67491	Mathematics, Engineering Science, Electrotechnics, Logic Systems, Industrial	Awarded / Instructional offerings passed	[2, 3, 10, 16, 17]

				Certificate		Electronics, Electrical Infrastructure, Building Skills, and Control Panel Wiring.		
Tshingombe Tshitadi Fiston	Africa Policing Institute / Afric Policing Instituts	National Diploma in Policing (Resolving of Crime) / Applied Policing	N1-N6 / NQF Level 6	Portfolio of Evidence / Assessment Log / Memorandum	SASSETA 111999691949 / 2023/0508 / 2011007434332	Crime prevention planning, criminal investigation, vehicle crime, tactical drill, forensic technology, and security systems engineering.	Completed assessment tasks / Verification of Irregularity	[1, 3, 10, 17]
Tshingombe Tshitadi Fiston	Atlantic International University	Master's Level Studies (Artificial General Intelligence / Engineering Design)	Masters / Level 6	Thesis Submission / Project Pitch / Academic Record	621717 / 00107251 / P-10307 / tshingombefiston@gmail.com	Research methodology, digital curriculum modeling, human-machine collaboration, ethical AGI, digital logic gate verification, and PCB	Thesis Integration Finalized / New	[4, 7, 12]

						design.		
Tshingombe Tshitadi Fiston	Atlantic International University	Engineering Studies: Electrical Engineering (Assessment & Appeal)	N-Diploma (90674) / NQF Not in source	Appeal statement / Transcript exam record	JXL6JWJL2Q73Z2DE8FP61G / 2100002023812	Manual soldering, electrical testing, legislative compliance, instrumentation calibration, and systems analysis.	Outcome not meeting requirement / Appeal pending	[5, 18, 19]
Tshingombe Tshitadi Fiston	Shalom Technical College	Engineering Studies	N3-N4	Admission Permit / Statement of Results	899993812 / 2100002023812	Electrical Trade Theory, Electrotechnics, Engineering Science, Mathematics, Industrial Orientation, and Plant Operation.	Fail / Collapse due to Irregularity / Results noted for remarking	[1-3, 16]
Tshingombe Tshitadi Fiston	SAQA	Electrical Engineering FET Certificate	NQF Level 4	Qualification Record	72052	Foundational electrical trade theory, installation, and technical drawing.	Registered	[4, 5]
Tshingombe Tshitadi Fiston	Afric Training Centre	Engineering Studies	N1, N3, N4	Admission Permit / Statement of Results	2004007064381 / 2011007434332	Industrial Electronics, Engineering Drawing,	Fail / Subject to Re-marking	[2, 16]

						Electrical Trade Theory, and Mathematics.		
Tshingombe Tshitadi Fiston	St Peace College	Electrical Engineering Infrastructure / Trade Test	NQF Level 4 / N2-N3	QCTO Application / Trade Test Application	202303115021 / COM 18269001	Panel Wiring, Control Logic, Electrical Principles, Workshop Practicum, and Industrial installation of AC/DC machines.	Final Verification Meeting Conducted / Recommended for Trade Test	[1, 10]
Tshingombe Tshitadi Fiston	SAQA / Atlantic International University	Application Trade Discovery: Job Education Research	Not in source	ICorps Executive Summary	P10438	Vocational training integration, autodidactic learning methodology, and trade diagnostics.	New Submission	[20]
Tshingombe Tshitadi Fiston	National Research Foundation (NRF)	SARChI Communities of Practice	Postdoctoral	Grant Application	COP250411310245	Advanced manufacturing research, energy storage, grid stabilization, and AI-driven optimization for microgrid	Application In Progress	[12]

						s.		
Tshingombe Tshitadi Fiston	St Peace College	Assessor/Moderator Skill Programme	Not in source	ETDP SETA Registration / Application	Ticket ID 35221 / ETDP-AS-000006376	Plan and conduct assessment of learning outcomes, moderation of engineering unit standards, and competency evaluation.	Resolved / Rejected (Missing documents)	[1, 7]
Tshingombe Tshitadi Fiston	INPP (DR Congo)	Motorised Petrol Engine (Moteur Essence)	A1/A2/A3 Equivalent	Attestation Proviso ire	Not in source	Technical pedagogy, electromechanics, and petrol engine service and maintenance.	Reussite (Success)	[3]
Tshingombe Tshitadi	Blockchain Academy	DLT Credentialing Module / Blockchain in Education	NQF Dashboard Tracked	Certificate	2025-10-08	Digital credentialing systems and distributed ledger technology application in education.	Awarded	[20]
Tshingombe Tshitadi	CPS Institute	CPS Architecture & IoT Lab	NQF Dashboard Tracked	Certificate	2025-10-08	CPS Integration and IoT Laboratory operations	Awarded	[20]

Tshingombe Fiston	Alison	Essentials of Electrical Safety	CPD Certified	Certificate	5273-37876299	. Hazard identification, personal safety equipment, emergency response, and electrical risk management.	Successfully completed	[21]
Tshingombe Fiston	ISC2	ISC2 Candidate	Professional Certification	Credential Badge	Not in source	Information security fundamentals and professional ethics.	Active (Issued 14 Nov 2023)	[5]
Tshingombe Tshitadi Fiston	Schneider Electric	Engineering Professional Development	CPD	Technical Certification	Not in source	Electrical installation, DB box wiring, switchgear, substation schematics, and AC/DC systems.	Expired/ Backlog	[7]
Tshingombe Tshitadi	Department of Science and Innovation	Engineering Electrical Project	Not in source	R&D Tax Incentive Notification	9722328238	Innovation in electrical engineering, power factor demand systems, and technology	In-progress	[22]

						integration.		
Tshingombe Tshitadi Fiston	China Criminal Police College	Applied Policing / Engineering Safety	Not in source	Work Experience Task Record	Not in source	Crime prevention, risk assessment for industrial environments, and health and safety incident management.	Task Completed	[23]
Tshingombe Tshitadi	Atlantic International University	Diploma in Applied Psychology – Consumer Behavior	Not in source	Academic Transcript	Not in source	Consumer Decision Process, Models of Behavior, Attitude Measurement, and Personality Theories.	Completed	[20]
Tshingombe Engineering	NSF SBIR/STTR	Power Management (PM)	Not in source	Project Pitch	00110596	Electrical engineering, energy technologies, and advanced power management systems.	New (Active Submission)	[20]
Tshingombe Tshitadi	SAQA / National Instructional Media Institute	Electrician 4th Semester	NSQF (LEVEL - 5)	Trade Practical Manual	2018 Edition	Electronic Practice, Control Panel Wiring, AC/DC Motor Drives, Inverter	Not in source	[24]

						and UPS maintenance.		
Tshingombe Tshitadi Fiston	SAQA	Foreign Qualification Evaluation	Not in source	Online Application	INCO0002527705I	Evaluation of credentials for Electrical Engineering and Applied Policing.	Referred to Evaluation Team	[25]
Tshingombe Tshitadi	St Peace College / Belus	Electrical Trade Theory NI	N1	Vocational curriculum documentation	May 2021 Belus	Electromechanical components, Hydraulic energy systems, circuitry, and material properties.	Not in source	[20]
Tshitadi Tshingombe	SAQA (Directorate: DFQEAS)	Foreign Qualification Evaluation	Not in source	Email Application / Inquiry	20220785055	Recognition of foreign undergraduate engineering credits.	Application Received / Outstanding Documents Requested	[10]
Tshingombe Tshitadi (Fiston)	ISPTKIN	Preparatory	1 Graduat	Certificat Prepo	Not in source	Math, Physics, Chemistry, Technology Electrical, Technology Mechanical,	Obtained 2007	[16]

Pedagogic al.

[1] portofolio career ,Research college engineering career joint gov compagny department(3).docx
[2] letter employment self assement , Incidence eaton employement.docx
[3] Portofolio evidence low dhet saqa su(1).docx
[4] careeer 20 drawig material didactic autopedagogie panel teach, psychometri fundamental pedagogie phenomen.docx
[5] careeer 23 ,disciplin didact education , assessment education , educ theory portofolio, educat investigation , experimental , education engineering system master , edcatio publish ,educat neural ,pc.docx
[6] Electrical Engineering Qualification and Appeals Documentation
[7] careeer 23 ,disciplin didact education labour ,social legislation low policy.docx
[8] Electrical Engineering Qualification and Appeals Documentation
[9] Incident logged on 2024, supplie letter tendered(1).docx
[10] supply examination diplomat saqatendered dhetForeign institutions inquiries.docx
[11] Book1 EXCELLEXAMINATIONREGISTER SUPPLY ST PEACE STtement diplomat.xlsx - Sheet2.pdf
[12] research fund science ,, skill research ,, .tshingombe note methode.docx
[13] DIPLOMA AWARD CERTIFICATE NATIONAL FRAMEWORK QUALIFICATION DESIGN ENGINEERING STUDIES - Copy.xlsx - Sheet1.pdf
[14] wallet office document appoint tbrigade edutech compagny.docx
[15] Portefeuil education tvet doc topic case book saqa(1).docx
[16] statement dhet saqa I'd transcript screen saqa-1-1.pdf
[17] engineering electrical tshingombe(1).docx
[18] Qualification Appeals and Infrastructure Development in South Africa
[19] Skip to content tshingombe xero.docx
[20] CAREER 25 FREELANCE EDUCATION MONTESORY.docx
[21] unnamed(10)(1)(2)(1).jpg
[22] zaire science inovationRESEARCH AND DEVELOPMENT.docx
[23] Career 15 application trade education orientation guide education actuary and methode resaerch library join info techno.docx
[24] zaire Electrician_SEM4_TP-1.pdf
[25] resulted outcome transcript dhet lettre appeal NN dip

Based on 20 sources

Qualification Title	Institution or Quality Partner	Technical Field	Key Skills and Deliverables	SAQA or Accreditation ID	Estimated Beneficiaries/Quantity	Assessment Outcome	Professional Liability/Registration (Inferred)	Source
National N Diploma	DHET / SAQA	Electrical Engineering	Maintenance, soldering, replacement,	90674 / 111285 / 66994	360 Credits	N1-N6 levels / NQF	Licensed Electrician / Instrument	[1-7]

Engineering Studies: Electrical Engineering	/ St Peace College / QCTO		system design, high voltage installations, renewable energy systems, automation (PLCs), Electrotechnics, and Plant Operation. Requires 18-24 months workplace experience.			Level 6	Technician / Candidate Engineering Technologist	
National Certificate: Electrical Engineering (N1-N6)	DHET / SAQA / Umalusi / St Peace College	Electrical Engineering	Mathematics, Engineering Science, Drawing, Electrical Trade Theory, and Industrial Electronics. Covers N1 (basic principles) through N6 (final theoretical level).	67109 (N1), 67375 (N2), 67491 (N3), 66881 (N4), 66960 (N5), 67005 (N6)	Not in source	N1-N6 / NQF Level 2-4	Artisan / Technician in Training / Registered Electrician	[2, 3, 5, 7-11]
Master of Science in Electrical Engineering (MSEE)	Atlantic International University (AIU)	Electrical Engineering / Power Systems	AI-driven optimization for hybrid renewable microgrids, smart grid storage, electrostatic/electrodynamic systems, and industrial power efficiency.	Not in source	$4,000,000 Budget	Master's Degree / Thesis Accepted	Professional Engineer / Research Lead	[1, 3, 4, 9, 10, 12-14]
Electrician (Shift Worker)	City Power Johann	Electrical Distribution	Daily maintenance, repair and	Bulletin 001/2022 / REF 001	1 per vacancy	Task Grade 9	Requires Electrical Trade Test	[7, 8, 15]

	esburg		installation of electrical systems; diagnose equipment malfunctions; repair LV and MV networks.				Certificate and Professional Driver's Permit.	
Dalkeith-Lutz 132kV Cable Project	City Power Johannesburg / Eskom	Power Transmission / High Voltage Engineering	Construction of double circuit 88kV cable supply (200MVA); 2500mm2 Aluminium XLPE cables; directional drilling; fibre optic protection.	Tender No. Dalkeith – Lutz	4800 meters route length	Successful Commissioning	Contractor professional liability insurance of R3m; Registered with Dept of Labour.	[1.3 (p. 5), 2.12 (p. 10), 638, 4.12.11, 1.4, 4.12.1]
Panel Wiring	St Peace College / QCTO / SAQA	Electrical Infrastructure	Design layout of control cabinet, installation of DB boxes, outlet sockets, switches, and induction motor wiring.	67461 / 263006 / 258937	Not in source	Level 2 / N4 / Competent	Licensed Trade Engineering Status / Technical Assistant	[4, 6-10, 15]
Specialized SAQA-Registered Skills	SAQA / QCTO	Electrical Infrastructure	Fault find, repair and maintenance of three-phase electrical systems; Install/maintain low voltage distribution boards.	ID 10259, ID 263006, ID 258937, ID 116466	Not in source	Certified	Licensed Trade Practitioner	[5]
National N Diploma	DHET / SAQA	Mechanical Engineering	Design, manufacturing, installation,	90674	360 Credits	NQF Level 6	Diesel Mechanic / Boilermake	[1]

Engineering Studies: Mechanical Engineering		g	testing, fault-finding, maintenance of mechanical equipment and fluid power systems.				r / Fitter and Turner	
Assessor / Moderator	ETDP SETA / SASSETA / St Peace College	Education and Training	Plan and conduct assessment of learning outcomes; conduct pre- and post-assessment moderation; verify marking consistency.	US ID No: 7978 / Reg. No: 123864	20 students	Accredited Status / Competent	Licensed constituent assessor / Registered with SASSETA.	[2, 15]
Fibre Optic Cable Installation	City Power / NRS	Telecommunications	Install 48-core non-metallic DUCT fibre cable; Distributed Temperature Sensing (DTS).	NRS 088-1	4800 meters	Splice Loss ≤ 0.1 dB	Telecom Engineer / Accredited Provider	[4.13.1, 4.13.2]
Schneider Home Certification	Home and Distribution Academy (Schneider Electric)	Energy Management Systems	Installing and wiring Schneider Inverter, Boost, and Pulse Backup Controller; commissioning with eSetup App.	Course Code: HDAPRDCS0001005	3 NABCEP CEU credits	80% passing score	Certified Installer	[1]
Modicon PLC Configuration	Schneider Electric	Industrial Automation and Control	Programming and integration of programmable logic controllers for process machine control and	IEC 17025, SANS Class 0.2	1200 note/Min processing	Technical Expert	Automation Specialist / Certified Installer	[3]

			variable speed drives.					
Smart Power Metering Module	Madinda Utilities / City Power / Eskom	Urban Energy Management	Rollout of DLMS/COSEM-compliant hardware, three-phase smart power measurement utilizing GPRS for remote billing data.	IEC 62056, IEC 61850	2,700 direct jobs	NQF Level 6	Electrical Systems Technician / Project Manager	[3]
Electrician (NSQF Level 5)	Indian Vocational Training (ITI) / NIMI	Electrical Trade	Wires, Joints - Soldering - U.G. Cables; Control Panel Wiring, AC/DC Motor Drives, Inverter and UPS, Power Generation.	Module No. 3 / NSQF Level 5	10,000 copies / 125 Hrs	Pass	Certified Electrician Trainee	[2, 16, 17]
Mechatronics Level 3	Merseta	Mechatronics / Control Instruments	Control panel and motor control; HVAC; welding; implementation of embedded control to real-time algorithms.	17-QA/ACC/1311/17	Not in source	Level 3	Accredited Training Provider	[7, 15]
Supply of Electricity to Rural Households	National Skills Fund (NSF)	Renewable Energy / Rural Electrification	Implement grid and off-grid electrification; 50-watt Solar Home Systems (SHS); mini-hydroelectrical and thermal generation.	Project Ref: P-09874	10,000 households	Declined	Principal Investigator / System Architect	[9, 10]
Microsoft	Microsoft	Data Engineerin	Introduction to Data	MCID: 99587175	Not in source	900 Badges	Azure Data Engineer	[9, 10]

Certified : Azure Data Engineer		g / Cloud Computing	Engineering on Azure; Secure data and manage user in Azure Synapse; Network security configuration.			/ 180 Trophies	Associate	
Diploma in Electrical Studies	Alison	Electrical Engineering	Basic electrical wiring, safety, circuits, theory, hand bending conduit, raceways, conductors, and cables.	Not in source	10-15 hours	80% - 91% Score	Trainee Electrician	[1, 2, 6, 9, 10]
Official ISC2 Certified in Cybersecurity (CC)	ISC2	Cybersecurity	Security principles, incident response, business continuity, disaster recovery, access controls, network security.	Not in source	CPE Credits	Certification Exam	Cybersecurity Associate	[1]
PSIRA Compliance and Security Policing	PSIRA / SASSETA / SAPS	Security Policies and Law Enforcement	Regulation and control of security occupation, installation of electronic security systems, and crime management.	PSIRA Act 56 of 2001	30 to 90 days	Grade A, B, C	Registered Security Management Professional	[3]
National Certificate: Policing	SAPS / Metropolitan Police	Policing and Security	Radio procedures, evidence gathering,	248 credits / Vacancy 14783	1 month training	Passed / Pending	Certified Police Officer / Vetted	[4, 18]

	Service		crime scene management, investigation, and traffic enforcement.				Officer Trainee	
Lifting Machine Operator	Department of Labour	Driven Machinery	Pre-operational testing, safety protocol, machine inspection.	Regulation 18(1)	12:1 Ratio	Competent	Certified Machine Operator	[4]
Registered Professional Engineer	ECSA / Home Affairs	Power Management	Engineering designs, software modules, CPD activities.	Not in source	1	Registered	Legally authorized to practice engineering in RSA	[5]
Specialist Engineering Infrastructure and Contractors	Atlantic International University (AIU)	Electrochemical Engineering	Design, implementation, and management of electrical infrastructure projects; advanced power system analysis; smart grids.	Not in source	Not in source	Doctorate Level	Professional Engineer (Pr.Eng)	[19]
Brevet de Technicien Supérieur (BTS) Électrotechnique	French Higher Education	Electrotechnics	Preliminary study and design of an installation (Étude et conception préliminaire d'une installation).	RNCP41007BC01	Not in source	Level 5 Diploma	Certified Electrical Professional (France)	[2, 16]
Postgraduate Diploma in Educational Technology	Council on Higher Education	Education, Training and Development	Emerging technologies, online learning design, digital design for mind brain and education.	Field 05	Not in source	Awarded	Assessor / Moderator / Educator	[4]
Master	Beijin	B2B E-	Bidding and	Not in	217 users	Thesis	Senior Data	[4]

of Engineering (Electrical)	g Huadian E-commerce	commerce / Electric Power	non-bidding data fusion, collaborative filtering algorithms, item ranking.	source		Project	Analyst / Research Engineer	
Applied Policing and Crime Resolution	DHET / NATED / NCV	Law Enforcement	Investigative techniques, crime scene management, evidence handling, legal framework application, forensic investigation.	Not in source	Not in source	Not in source	Investigator / Police Officer	[1]
Robotic Process Automation Engineer	SARB	Robotics / Systems Engineering	Design, test and maintenance of autonomous processes; technical documentation.	102	Not in source	Application Outcome	Professional Engineer	[8]
SQA Advanced Certificate in Electrical Engineering	SQA	Electrical Engineering	Power Electronics, Control Systems, Inspection and Testing of Low Voltage Electrical Installations, PLC programming.	SCQF level 7 (GP6D 47)	96 SCQF credits	Not in source	Professional Engineering Technician	[6]
Electronic Skills Programme Installer	SASSETA / PSIRA	Electronic Security Industry	Cabling methods, installation of electronics equipment, radio transmitter and antenna systems.	NQF Level 4	Not in source	Competent	Registered Security Service Provider	[4]
Bachelor	Pearso	Humanitie	Child care,	ID 62761	Not in	Honour	Academic	[18]

of Arts	n Institute	s / Marketing Research	communication, humanity resource management, marketing research.		source	s (NQF Level 8)	qualification (South African NQF)	
Masters in Supply Chain Management	University of Pretoria	Software / Logistics	Design and implementation of traceability systems, supply chain digitalization, blockchain applications.	Not in source	Not in source	Master's Level	Supply Chain Specialist	[13]
Senior Lecturer - Report 191	DHET	Electrical and Civil Engineering	Lecturing Mathematics, Mathematical Literacy, and Engineering subjects.	Post Level PL2	Not in source	Not in source	Registered Educator (SACE)	[17]

[1] 252678_thesi project book , final engineerin tshingombe , time table allocation job cost.docx
[2] new 2career engineering.2.pdf
[3] new 5career engineering5.pdf
[4] 176245_course ciriculum total course thesis alumine(1)(1).docx
[5] new 4career engineering4.pdf
[6] 824769_Career center scie bono tshingombe faciltator note.docx
[7] 398987_Prospect student alu research 2 assessement thesisi experimental ,,.docx
[8] 795797_Prospect student alu research 2 assessement thesisi experimental ,,.docx
[9] 359173_Proposal of thesis content 2 final research(2).docx
[10] new 3career engineering3(1).pdf
[11] 896176_1alu course assessent tshingombe 23 engineering master.docx
[12] Proposal of thesis content 2 final research(4).docx
[13] 835174_thesis course energie rural ...docx
[14] Proposal of thesis content. 1-1.pdf
[15] 398481_portofolio career ,Research college engineering career joint gov compagny department 234(1).docx
[16] The_Labyrinth_to_the_Blueprint-1.pdf
[17] 574174_zaire tvet practical theory St peace College.docx
[18] experimental2 career thesis tlantic office pc lab(4).docx
[19] 454623_thesis course energie rural ..(1).docx

Credential or Project Title	Category	Organization or Platform	Status or Achievement	Reference Identifier	Associated Skills or Technology	Date	Source
Web-Based	Research	Qeios	Peer-	https://doi.org/10.32388/	Computer	202	[1],

Crime Management System for Samara City Main Police Station	Article / Preprint		approved / Published	JGU5FH	Science, Information systems, client-server architecture, PHP, MySQL	3-12-11	[2]
National N Diploma: Electrical Engineering	Academic Credential	St Peace College (SAQA/QCTO)	Awarded	SAQA QUAL ID: 66994 / 90674	Electrical Engineering, Mathematics, Industrial Electronics	2024-02-12	[3]
Discover Data Concepts and Implement Solutions with Microsoft Fabric	Professional Development	Microsoft Learn	Completed	MCID: 99587175	Data & AI, Azure, Microsoft Fabric	2024-03-01	[3]
PLC Configuration, EcoStruxure Power, energy modeling and verification	Industrial Certification	Schneider Electric	Completed	607069d9-fa26-423a-9d8c-d810df173a87	Industrial Automation, PLC	2025-12-31	[3]
SASSETA Assessor / Moderator Certificate	Professional Certification	PSiRA / SASSETA	Certified	ID Number: TIRCG00091061010	Assessment and Quality Assurance	2024-12-22	[3]
ISO 37301:2021 Principles of Compliance Management System	Industrial Certification	Alison	Certified (91% Score)	Not in source	Compliance Management	2023-09-15	[4], [3]
Information	Project Submissi	Tshingombe	Inventor / Prototype	Kfrm1-Kfrm6	Visual Basic (VB),	Not in	[1]

Management System (IMS): Modular Framework	on / Prototype	Engineering / Institutional Networks	Complete		Secure registration, biometric validation, credential handling	source	
MIP-630-24-0100-000	Project Submission / IP Registration	Microsoft Forms / Legal	Submitted	MIP-630-24-0100-000	IP, code registration, regulatory	2025-02-14	[1]
I-Corps program application	Project Submission / Grant Application	National Science Foundation (NSF)	Declined	Not in source	Core technology development, Advanced Manufacturing	2025-02-14	[4], [3]
DHET NATED Statement of Results (N3 Level)	Academic Research	DHET	55% (Electro-Technology N3)	Ref: 20191130002	Electrical Engineering	2023-01-01	[4]
SAQA Qualification N4 / Level 5	Academic Credential	SAQA / DHET / QCTO	Recorded	67109	Engineering Electrical, Panel Wiring	Not in source	[1]
Basic Electrical Safety	Professional Certification	Sci-Bono Discovery Centre	Certificate	SAQA/NQF Level 4, WA Code EA2	Electrical Engineering, Wiring Kit	2025-10-08	[4]
Registered Professional Engineer	Industrial Certification	ECSA / Home Affairs	Registered	Not in source	Professional Engineering	2025-10-08	[4]
Cyber Essentials Plus Certification	Industrial Certification	BlockMark Registry	Verified	Not in source	Cybersecurity & Digital Trust	2025-12-13	[4]
IT Asset Management Administrator	Job Application	South African Reserve Bank (SARB)	Active	1165	Compliance automation, asset tracking	2025-02-09	[1]

Applications Design Lead	Job Application	South African Reserve Bank (SARB)	Active	904	Modular systems, VBA frameworks	2025-02-09	[1]
Smart Panel	Project Submission	Schneider Electric	Compliance Logged	GitLab + Azure DevOps billing portal	Energy Mgmt Compliance	2025-10-08	[4]
MBM302 Master Thesis Review	Academic Research	Atlantic Intl. University	Accepted	IJETR3156	Eng. Systems	2025-10-08	[4]
CI/CD Pipeline Subscription	Project Submission	GitHub / Azure DevOps	Active	GitLab audit log	Trailblazer Superbadge – Data Cloud	2025-10-08	[4]
Labour Law Training	Professional Credentials	SASSETA / CCMA	Completed	MERSETA + Home Affairs compliance log	Workplace Dispute Resolution	2025-10-08	[4]
Google Classroom Fundamentals	Certification	Google Classroom	Completion	Certificate ID: 2802B71CB4243E14290	Education Technology	2023-10-26	[5]
From Idea to Reality: A Comprehensive Guide to Setting Up Your Own Company	Continuing Education	Atlantic International University (AIU)	Certificate of Participation	Not in source	Entrepreneurship	2023-10-13	[3]
Electrical Trade Theory Engineering Nated	Academic Research	Internet Archive	Archived	Not in source	Electrical Trade Theory	2023-09-09	[4]
Career project implementation framework design	Project Submission	F1000Research	Rejected	Not in source	Curriculum Design	2025-04-11	[3]

Altivar Machine Professional	Industrial Certification Training	Schneider Electric	Active training	Automation & Drives	Drives Basics, Harmonics, EMC, Mounting & Cabling (ATV340)	Not in source	[1]
ASHE Energy Manager	Professional Certification Training	Schneider Electric / ASHE	In Progress	C001	Energy Management, IPMVP, power factor analysis	Not in source	[1]
Sustainability School	Professional Certification Training	Schneider Electric	In Progress	C002	Renewable energy, smart grid	Not in source	[1]
Basic Machines with PacDrive 3	Industrial Technical Test	Schneider Electric	Failed	C003	PacDrive 3, Automation	Not in source	[1]
Copilot Pro	Professional Subscription	Microsoft	Active	Microsoft account	AI companion, productivity	Not in source	[1]
Microsoft 365 Basic	Professional Subscription	Microsoft	Expired	Microsoft account	Premium apps, ad-free email, support	Not in source	[1]
Explore AI basics	Professional Module	Microsoft Learn	Done	AI Fluency	Machine learning, AI types	Not in source	[1]
Introduction to GitHub administration	Professional Module	Microsoft Learn	Done	GitHub Fundamentals	Roles, access control	Not in source	[1]
Introduction to Data Engineering on Azure	Professional Credentials	Microsoft	Certified	Not in source	Azure, Data Engineering	Not in source	[4]
Diploma in Teaching	Academic	Alison	Certified	Not in source	Pedagogy	Not in	[4]

Skills For Educators Research sour ce

[1] UserForm 90004444 career totand and trade portoloio.frm1.pdf
[2] UserForm17 police student registrar tshingombe tank ,,career.frm3.pdf
[3] new career engineering.pdf
[4] new 3career engineering3.pdf
[5] tshingombe tshitadi engineering and education technolog

Based on 50 sources

Project or Item Title	ID or Label Name	Category	Description	Input Type	Source
Azure DevOps Item	1222	Crime Management	Contractor - Associate Investigator General focused on evidence mapping and legal reform.	DevOps Board	[1]
Azure DevOps Boards Engineering Project	4702024FCV001046	Crime Management	Domestic violence case record linked to protection order applications.	Case Item	[2]
Web-Based Crime Management System for Samara City Main Police Station	Not in source	Crime Management	An online application for citizens to report crimes and for police to manage records, database retrieval, and automated reporting.	Web Interface	[1], TRADE THEORY AND PRATICAL TOOLS LAB WORKSHOP MANUFACTURE ,,, framework.pdf, UserForm17 police student registrar tshingombe tank ,,career.frm3.pdf
Azure DevOps Item	1165	Engineering	IT Asset Management Administrator role/task involving compliance automation	DevOps Board	[1]

			and asset tracking.		
Azure DevOps Item	904	Engineering	Applications Design Lead role involving modular systems architecture and VBA frameworks.	DevOps Board	[1]
Azure DevOps Item	1208	Engineering	Associate Resolution Planning Specialist focused on risk-based compliance and systemic reform.	DevOps Board	[1]
discovery career science technical engineering	86	Engineering	Azure DevOps work item related to discovery in career science and technical engineering.	Azure DevOps Item	[3]
engineering trade programe	85	Engineering	Azure DevOps work item regarding an engineering trade program.	Azure DevOps Item	[3]
nrf engineering	84	Engineering	Azure DevOps board work item regarding National Research Foundation engineering project.	Work Item	[3], Work items - Boards azure tshingombe.pdf
engineering nated nvc	83	Engineering	Work item covering	Work Item	[3], Work items - Boards azure

excell research tvet			NATED, NVC, Excel research for TVET and engineering standards.		tshingombe.pdf
Engineering Visual Excell MS Word	82	Engineering	Azure DevOps board work item regarding engineering documentation using Microsoft tools.	Work Item	Work items - Boards azure tshingombe.pdf
engineering visual basic	81	Engineering	Azure DevOps board work item regarding Visual Basic software development in engineering.	Azure DevOps Item	[3], Work items - Boards azure tshingombe.pdf
engineering visual basic	80	Engineering	Azure DevOps board work item focused on data systems using Visual Basic.	Work Item	Work items - Boards azure tshingombe.pdf
engineering visual basic	79	Engineering	Work item focused on Engineering and Visual Basic.	Azure DevOps Item	[3]
engineering data system	74	Engineering	Work item for development of engineering data systems.	Azure DevOps Item	[3]
Azure DevOps	1042024CIV004539	Engineering	A civil law related item	Work Item	[2]

Boards Engineering Project			identified in the system as screen application status.		
Azure DevOps Boards Engineering Project	112024CIV000013	Engineering	Civil engineering task or case record within the DOJ tracking system.	Work Item	[2]
Advanced Studies in Autonomous Vehicles	37.1	Engineering	Engineering principles and technological innovations driving autonomous systems and drones.	Course Topic	[4]
Data Processing and Hosting Services	16.1	Engineering	Advanced concepts in managing vast amounts of data and hosting infrastructure.	Course Topic	[4]
Information Management System (IMS) Prototype	Kfrm1-Kfrm6	Engineering	A modular VB-based form architecture for secure registration, biometric validation, and credential handling.	VB UserForm	[1]
Design and implementation of a modular, form-driven Information Management System	Academic Topic 1	Academic Research	Research on secure registration, biometric validation, and credential handling.	Research Paper/Topic	[1], [5]

(IMS)					
Curriculum Assessment in Trade & Engineering Education	Academic Topic 2	Academic Research	Report examining integration of career education materials, award certificates, and audit-ready documentation.	Didactic Report	[6], new 2career engineering.2.pdf
Smart Grid & AI-Based Automation	Research Proposal 1	Academic Research	Research on AI-based predictive maintenance in industrial systems and machine learning for power transformers.	Research Proposal	[6]
Wireless Technologies	Research Proposal 2	Academic Research	Developing high-efficiency resonant inductive coupling systems for wireless power transmission.	Research Proposal	[6]
Masters in Cryptocurrency and Blockchain Applications	17.1	Academic Research	In-depth exploration of blockchain technology and digital currency foundations.	Course Topic	[4]
Academic Research Topic	Not in source	Academic Research	The Impact of Nanotechnology on Society, Education, and	Expo Category: Social Sciences	[1]

			Employment in the Fourth Industrial Revolution.		
VBA UserForm Component	Label11	Component	A label component in a VBA UserForm triggered by a click event; also used for label number.	Click Event / TextBox10	[1], TRADE THEORY AND PRATICAL TOOLS LAB WORKSHOP MANUFACTURE ,,, framework.pdf
VBA UserForm Component	Label16	Component	A label component in a VBA UserForm triggered by a click event; also used for triac.	Click Event / TextBox15	[1], TRADE THEORY AND PRATICAL TOOLS LAB WORKSHOP MANUFACTURE ,,, framework.pdf
VBA UserForm Component	Label19	Component	A label component in a VBA UserForm triggered by a click event.	Click Event	[1]
VBA UserForm Component	Label20	Component	A label component in a VBA UserForm triggered by a click event.	Click Event	[1]
VBA UserForm Component	TextBox29	Component	A textbox component in a VBA UserForm that triggers on change.	Text Change	[1]
VBA UserForm Component	TextBox3	Component	A textbox component in a VBA UserForm that triggers on change.	Text Change	[1]
VBA	TextBox9	Componen	A textbox	Key	[1]

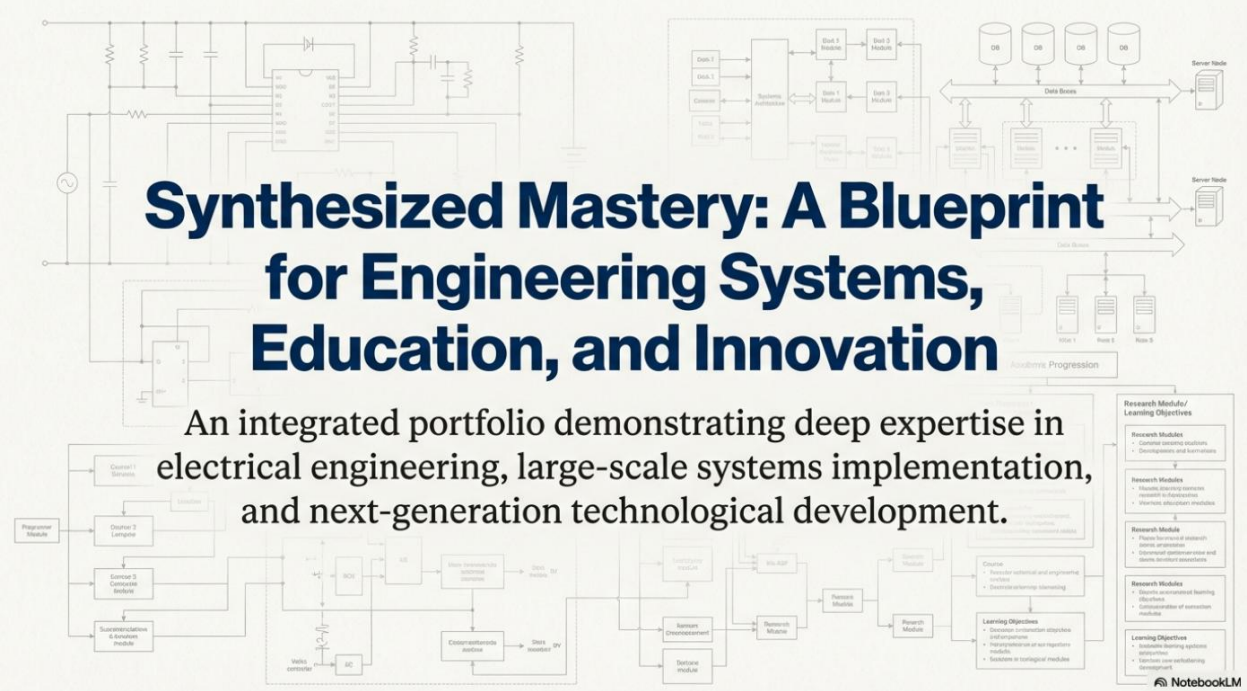
UserForm Component		t	used for capturing fault codes such as FDR-TRP and protocols like IEC61850.	Down/Press/Mouse	
Kfrm1	Initial registration	Component	Form for initial user registration including name, surname, ID, and cellphone details.	TextBox, Label	[5]
Kfrm2	Address and birthday capture	Component	Form used for capturing user address and birth date information.	TextBox, Label	[5]
Kfrm3	Registration confirmation	Component	Form used for confirming the user registration process.	Label	[5]
Kfrm4	Login	Component	Form for account login and password recovery.	TextBox, Label	[5]
Kfrm5	Password recovery	Component	Form for resending passwords and saving records.	Label	[5]
Kfrm6	Biometric validation	Component	Form for security scanning and biometric validation.	Label	[5]
Student Registration Form	student name	Component	Label for the student name entry on the data entry form.	Label	[4]
Automated	frm dataentry	Componen	VBA	UserForm	[4]

Student Registration Form		t	UserForm name for the automated student registration system.		
Simple Calculation in VB	operand 1	Component	Variable defined as a double to hold the first number in calculations.	Variable	[4]
Simple Calculation in VB	txt input	Component	Textbox for user input and result display in the visual basic calculator.	Textbox	[4]
Student Registration Form	txt student name	Component	Input field for capturing student's name on the registration interface.	Textbox	[4]
Requirement Component Tools	Label 2	Component	User interface element labeled for requirement component tools within a VBA form.	TextBox1	TRADE THEORY AND PRATICAL TOOLS LAB WORKSHOP MANUFACTURE ,,, framework.pdf
Train Kit	Label 3	Component	User interface element labeled for train kit within a VBA form.	TextBox2	TRADE THEORY AND PRATICAL TOOLS LAB WORKSHOP MANUFACTURE ,,, framework.pdf
Material Copper	Label 4	Component	User interface element labeled for material copper within a VBA form.	TextBox3	TRADE THEORY AND PRATICAL TOOLS LAB WORKSHOP MANUFACTURE ,,, framework.pdf

Procedure Construction	Label 5	Component	User interface element labeled for construction procedure within a VBA form.	TextBox4	TRADE THEORY AND PRATICAL TOOLS LAB WORKSHOP MANUFACTURE ,,, framework.pdf
Test 1, 2, 3	Label 6	Component	User interface element labeled for testing steps within a VBA form.	TextBox5	TRADE THEORY AND PRATICAL TOOLS LAB WORKSHOP MANUFACTURE ,,, framework.pdf
Mounted	Label 7	Component	User interface element labeled for mounted status within a VBA form.	TextBox6	TRADE THEORY AND PRATICAL TOOLS LAB WORKSHOP MANUFACTURE ,,, framework.pdf
Transistor Label Pin Desig	Label 12	Component	User interface element labeled for transistor pin designation within a VBA form.	TextBox11	TRADE THEORY AND PRATICAL TOOLS LAB WORKSHOP MANUFACTURE ,,, framework.pdf
Semi Conductor	Label 13	Component	User interface element labeled for semiconductor within a VBA form.	TextBox12	TRADE THEORY AND PRATICAL TOOLS LAB WORKSHOP MANUFACTURE ,,, framework.pdf
Diode	Label 14	Component	User interface element labeled for diode component within a VBA form.	TextBox13	TRADE THEORY AND PRATICAL TOOLS LAB WORKSHOP MANUFACTURE ,,, framework.pdf
Thyristor	Label 15	Component	User interface element labeled for	TextBox14	TRADE THEORY AND PRATICAL

			thyristor within a VBA form.		TOOLS LAB WORKSHOP MANUFACTURE ,,, framework.pdf
Integer Circuit	Label 17	Component	User interface element labeled for integrated circuits within a VBA form.	TextBox16	TRADE THEORY AND PRATICAL TOOLS LAB WORKSHOP MANUFACTURE ,,, framework.pdf
Oscillator	Label 18	Component	User interface element labeled for oscillator component within a VBA form.	TextBox17	TRADE THEORY AND PRATICAL TOOLS LAB WORKSHOP MANUFACTURE ,,, framework.pdf

[1] UserForm 90004444 career totand and trade portoloio.frm1.pdf
[2] tshingombe REPUBLIC OF SOUTH AFRICA.docx
[3] Work items - Boards azure.pdf
[4] Doc13 design tshing.docx
[5] UserForm total career outcom 90000333 , completed tota.frm to trade.frmt5.pdf
[6] new career engineering.pdf

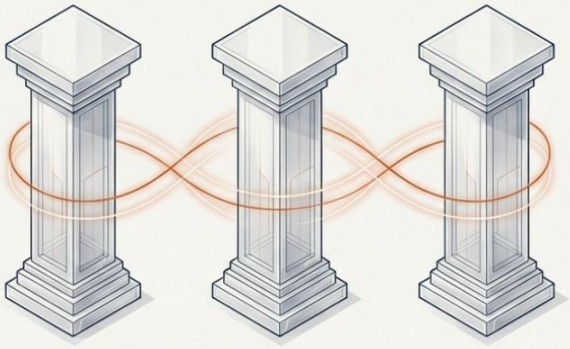

Synthesized Mastery: A Blueprint for Engineering Systems, Education, and Innovation
An integrated portfolio demonstrating deep expertise in electrical engineering, large-scale systems implementation, and next-generation technological development.
NotebookLM

An Intentional Synthesis of Disciplines

This body of work represents the deliberate integration of three distinct but interconnected domains of mastery:

1. Deep Electrical Engineering

A rigorous foundation in the theoretical and practical principles governing electrical systems.



3. Education & Future Systems

A commitment to scaling expertise through education and driving innovation at the frontier of technology.

2. Broad Systems Implementation

The application of core knowledge to design and manage complex socio-technical systems in public and private sectors.

NotebookLM

The Foundation: Mastering the Physics of Electrical Systems

A Rigorous Grounding in Engineering Mathematics and Theory

Academic Progression

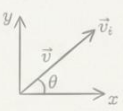
- N1
- N2
- N3
- N4
- N5
- N6

Key Theoretical Domains

Advanced Mathematics (N4-N6)

Application of differential and integral calculus, partial fractions, and differential equations to solve complex engineering problems.

$$\int f(x)\,dx \qquad \frac{dy}{dx} = \frac{(-y)^2}{c}$$

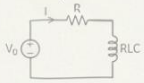


Engineering Science (N4)

Mastery of kinematics, dynamics, hydraulics, and stress/strain principles.

Electrotechnics (N4)

In-depth analysis of RLC circuits, DC/AC machines, and network theorems (e.g., Kirchhoff's Laws).



Evidence Panel

- **Qualifications***: NATED N1-N6 Diploma Track
- **Key Subjects***: Mathematics N6, Engineering Science N4, Electrotechnics N4
- **Core Concepts***: Maxwell's Equations, Fourier Transforms, Laplace Transforms, Ohm's Law

NotebookLM

The Foundation: Mastering the Physics of Electrical Systems

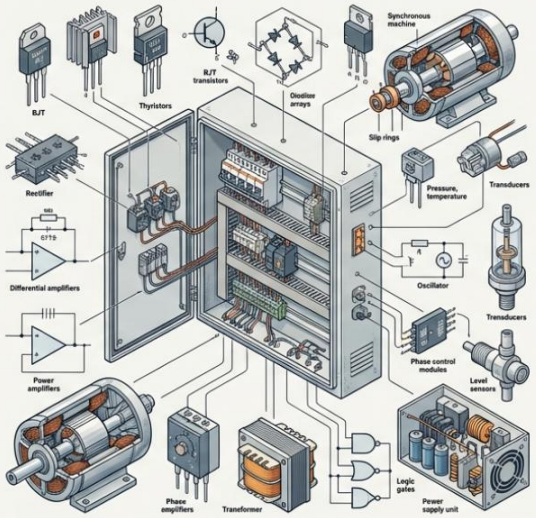
Applied Mastery: From Trade Theory to Industrial Electronics

Trade-Specific Knowledge

- **Electrical Trade Theory (N3):** Principles of electrical installation, maintenance, safety, circuit design, and troubleshooting techniques.
- **Industrial Electronics (N5):** Expertise in amplifiers (differential, integrator), thyristors, transducers, oscillators, and phase control systems.

Component & System Expertise

- Deep understanding of DC/AC Machines, Transformers, and Power Supplies.
- Knowledge of digital logic systems, including Boolean algebra and logic gates.



Evidence Panel

Key Subjects: Electrical Trade Theory N3, Industrial Electronics N5
Regulatory Standard: SANS 10142-1 (The South African National Standard for the wiring of premises)
Components: Transistors, Rectifiers, Amplifiers, Synchronous Machines, Transducers

NotebookLM

The Application: Engineering Complex Socio-Technical Systems

Designing for Society: Modernizing Public Infrastructure

Traffic Signal Systems

1. Candidate Site Identification & Warranty Study
2. Signal Design (including geometric improvements and land surveys)
3. Installation Supervision & Contractor Management
4. Commissioning & Final Inspection

Power & Metering Systems

- Design of building-mounted metering systems.
- Expertise in lightning protection and soil resistivity measurement.
- Compliance with international standards for electromagnetic compatibility and surge protection.

Evidence Panel
Engagements: City Power, Eskom
Key Standards: IEC 61000-4-5 (EMC Testing), IEC 62053-22 (Electricity Metering), SANS Rules

NotebookLM

The Application: Engineering Complex Socio-Technical Systems

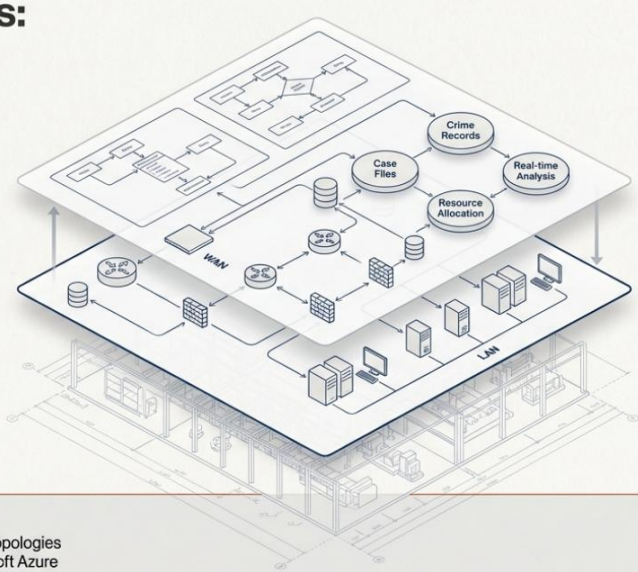
Building Intelligent Systems: From Data Architecture to Industrial Control

Police Management Information Systems

- **Architecture:** Designing systems using Data Flow Diagrams (DFD) and Entity-Relation (ER) diagrams to manage crime records, case files, and resource allocation.
- **Networking:** Implementing secure Wide Area Network (WAN) and Local Area Network (LAN) topologies.
- **Objective:** To enhance e-government capabilities, improve public safety, and enable real-time crime data analysis.

Industrial Automation & Control

- Completed training and configuration of Schneider Electric systems, including EcoStruxure Power, Modicon M340 processors, and motor starters (variable speed drives).
- Knowledge of Eaton's power system products and field service engineering principles.



Evidence Panel
Concepts: Data Flow Diagrams, Entity-Relation Diagrams, WAN/LAN Topologies
Technologies: Schneider Electric EcoStruxure, Modicon M340, Microsoft Azure
Projects: E-Police System Design, Motor Control Configuration

NotebookLM

The Multiplier: Scaling Expertise Through Education & Mentorship

A Portfolio of Continuous Professional Development

Microsoft

MCID: 99587175

Credentials: Level 18, 1,225,400+ XP

Completed Training: Introduction to Data Engineering on Azure; Configure Network Security; Perform Device Investigation in Microsoft Defender.

Schneider Electric

Completed Training:

EcoStruxure Power: Energy Modeling & Verification

Drives Fundamentals of Kinematic Calculation

Physical Infrastructure Management Basics

Heating, Ventilation, and Airborne Disease Transmission

ISC² BrightTalk

ISC²: Certified in Cybersecurity

BrightTalk: Certificates of Attendance in "Next Generation of SASE," "Generative AI and Enterprise IT," "Inside the Mind of a Hacker."

Alison: Numerous certificates in Electrical Engineering topics, including Transformer Components and Basics of Electrical Technology.

NotebookLM

The Vision: Innovating at the Intersection of Engineering and Intelligence

Forward Trajectory: A Doctoral Focus on Next-Generation Systems

Proposed Doctoral Research

Primary Fields: A synergistic focus on Power Systems, Control Systems, Telecommunication, and Embedded Systems.

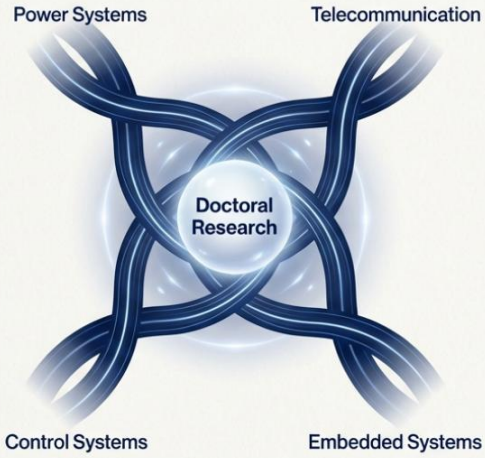
Research Goal: "To contribute new knowledge or solutions to existing challenges in the electrical and electronics field."

Institutional Engagement

Actively pursuing a Master's / Doctoral degree through Atlantic International University (AIU), an institution emphasizing customized, andragogic (self-directed) curriculum design.

Advanced Coursework

- Advanced Electromagnetic Theory
- Digital Signal Processing
- Control Systems Design
- VLSI (Very Large Scale Integration) Design



NotebookLM

The Vision: Innovating at the Intersection of Engineering and Intelligence

Mastering the Digital Frontier: AI, Cybersecurity, and Advanced Architectures

Artificial Intelligence & Machine Learning

Studied applications of ML in Electrical Engineering, including optimization of energy efficiency, modulation, and signal processing. Explored AI-powered systems for e-commerce, product recommendations (collaborative filtering), and generative AI for enterprise IT.

Cybersecurity & Information Assurance

Formal certification from ISC2 (Certified in Cybersecurity). Explored advanced topics such as Ethical Hacking, Penetration Testing, quantum cryptography, and zero-trust security models.

Advanced System Architectures

Studied the application of Distributed-Ledger Technologies (DLT/Blockchain) in educational technology for secure credentialing. Analyzed Cyber-Physical Systems (CPS) in telecommunications and smart grids. Researched the role of IoT and Robotic Process Automation (RPA) in creating smart supply chains and electrical systems.

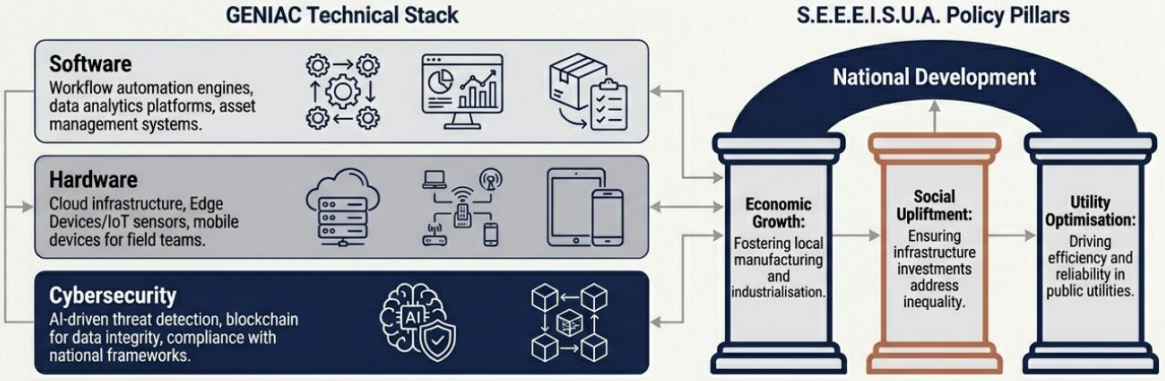
Evidence Panel

Concepts: Machine Learning, DLT/Blockchain, Cyber-Physical Systems, IoT, Zero-Trust Models
Certifications: ISC2 Certified in Cybersecurity

NotebookLM

A Strategic Proposal: Operation GENIAC & S.E.E.E.I.S.U.A. Integration

A proposal for a fully integrated, automated national system for Governance, Engineering, National Infrastructure, Asset Control (GENIAC) and its policy framework, the Synthesized Economic, Engineering, Educational, Industrial, and Social Upliftment Architecture (S.E.E.E.I.S.U.A.).


GENIAC Technical Stack
Software
Workflow automation engines, data analytics platforms, asset management systems.
Hardware
Cloud infrastructure, Edge Devices/IoT sensors, mobile devices for field teams.
Cybersecurity
AI-driven threat detection, blockchain for data integrity, compliance with national frameworks.
AI
S.E.E.E.I.S.U.A. Policy Pillars
National Development
Economic Growth:
Fostering local manufacturing and industrialisation.
Social Upliftment:
Ensuring infrastructure investments address inequality.
Utility Optimisation:
Driving efficiency and reliability in public utilities.

Initial Application: The Madinda Utilities Advanced Metering Infrastructure (AMI) Rollout, showcasing remote configuration, RFID asset tagging, and high-level security (IEC 62056-5-3).

NotebookLM

The Synthesized Expert: A Blueprint for Impact

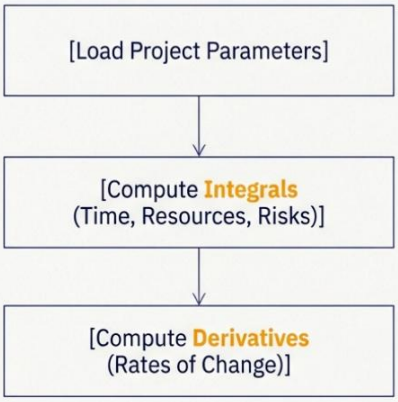
The journey from NATED qualifications to designing national automation frameworks is not a random collection of skills, but a **story of intentional synthesis**. This portfolio demonstrates a unique capability to bridge deep engineering principles with complex societal needs.

Ready to design, implement, and lead complex socio-technical projects that generate lasting value.

NotebookLM

The Applied Engine: From Theory to Measurable Application

The Applied Engine translates didactic learning into practical, measurable outcomes. It provides tools for project planning, resource management, and cost projection, ensuring every application of knowledge is tracked and quantified.



Project Planning

Total Time: $T = \int_0^N t_i di$

Resource Management

Total Consumption: $R = \int_0^T r(t) dt$

Cost Projection

Total Cost: $C_{\text{total}} = \sum (M_{\text{material}} + H_{\text{human}} + S_{\text{stationery}} + B_{\text{building}})$

NotebookLM

The Engine's Source Code: Verifiable Logic in Visual Basic

The system's backend is built on robust, auditable code. These VBA modules automate calculations for everything from renewable energy harvesting to project cost estimation, creating a verifiable record of applied knowledge.

Renewable Energy & Smart Grid Functions

```
' Renewable Energy: Wind Harvest
Function WindEnergyHarvest(rho, A, v, eta, duration) As Double
    WindEnergyHarvest = 0.5 * rho * A * (v ^ 3) * eta * duration
End Function

' Solar Efficiency
Function SolarEfficiency(Egenerated, Eincident) As Double
    ...
End Function
```

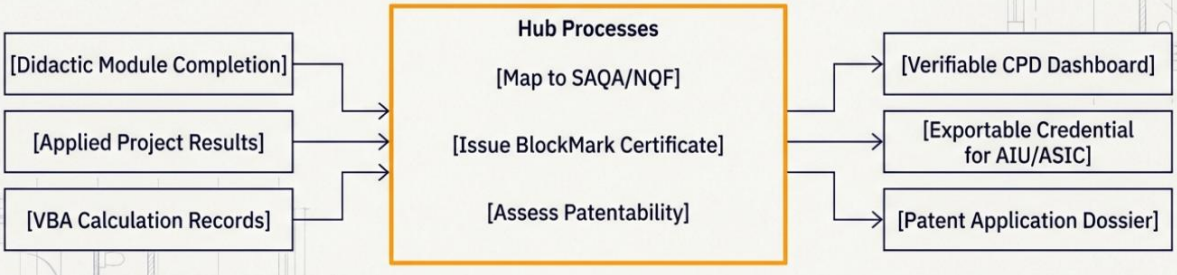
Project Cost Estimation Logic

```
' Estimate Total Project Cost
...
"Human Resource: " & FormatCurrency(entry.HumanResourceCost)
"Material: " & FormatCurrency(entry.MaterialCost)
"Building / Infrastructure:" & FormatCurrency(entry.BuildingCost)
"Total Cost: " & FormatCurrency(EstimateTotalProjectCost(...))
```

NotebookLM

The Credentialing & IP Hub: Verifying Mastery and Ownership

All structured learning and applied work culminates in the Credentialing & IP Hub. This pillar formalizes achievement through interoperable digital certificates, maps competencies to national qualification frameworks, and provides a structured process for managing intellectual property.



Bilingual & Legacy Ready

The system generates a bilingual (English/French) career portfolio and legacy-ready export formats.

NotebookLM

The Mechanics of Verification: Blockchain-Ready Credentials

The system integrates with third-party services like BlockMark Technologies to issue secure, verifiable digital certificates. This process supports both expiring (e.g., annual CPD) and non-expiring credentials, with options for premium blockchain features.

BlockMark Certificate Issuance Price List (VAT Excl.)

Item	Price (credits)	Paid for by
Issue a certificate with an expiry date	£1 (100) per year	Issuer
Issue a non-expiring certificate	£10 (1000)	Issuer
Issue a CPD folder with a certificate	£1 (100) per year	Issuer
Stamp a hash of an issued certificate on blockchain	£1 (100)*	Issuer

*Coming soon (currently beta-testing with no charge)

NotebookLM

From Research to Asset: A Structured Path to Patentability.

Beyond credentials, the hub manages the lifecycle of intellectual property. It aligns with international patent standards, tracking research methodology and assessing inventions against key criteria to create an audit-ready trail for patent applications.

Patentability Criteria

1. **Novelty**: Not publicly disclosed before filing.
2. **Utility**: Must function and serve a useful purpose.
3. **Inventive Step**: Not obvious to a skilled professional in the field.

Reference: `URFIST Paris` patent tutorials and `Espacenet` database for prior art searches.

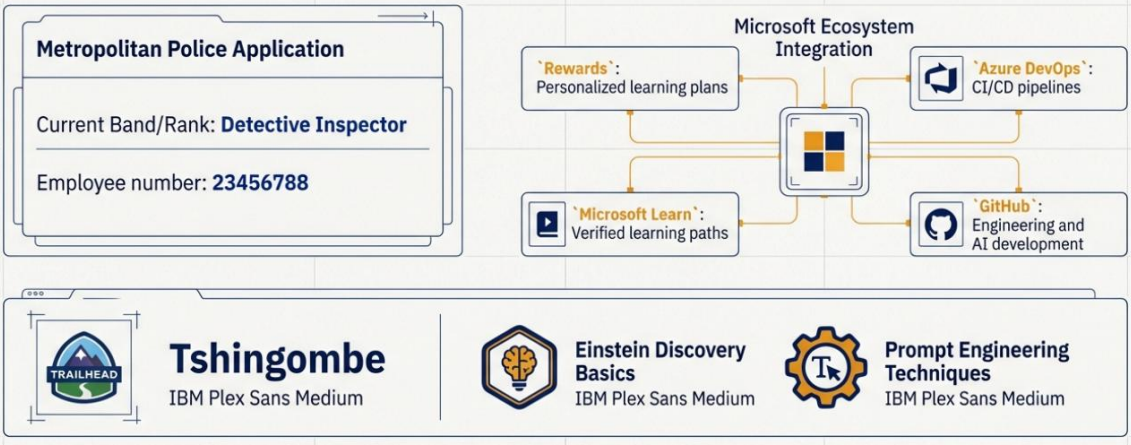
VBA Logic for Patent Tracking

```
' Module: Research and Patent Lifecycle Tracker
Type ResearchPatentProject
    ProjectID As String
    ScopeDefined As Boolean
    MethodologySet As Boolean
    PatentNovelty As Boolean
    PatentUtility As Boolean
    PatentInventiveStep As Boolean
    PatentFiled As Boolean
    CertificationStatus As String
End Type
```

NotebookLM

The Professional's Journey: Tshingombe's Integrated Career Engine.

The system is designed to be a lifelong career co-pilot. For a professional like **Tshingombe**, it integrates disparate platforms into a single, credential-linked engine, supporting everything from job applications to advanced engineering certifications.



NotebookLM

Mapping to National Standards: The SAQA NQF Level 3 Electrical Engineering Certificate.

The platform's data model is designed to align with rigorous national qualification frameworks, such as the South African Qualifications Authority (SAQA). It maps every learning activity and competency to specific unit standards, ensuring full compliance and auditability.

SAQA ID 63790: National Certificate: Electrical Engineering (NQF Level 3, 133 Credits)			
Component	**Unit Standard ID**	**Title**	**Credits**
Core	258963	Install, test and maintain electrical equipment in a hazardous location	10
Core	113924	Install and commission DC and AC machines and control gear	10
Fundamental	119472	Accommodate audience and context needs in oral/signed communication	5
Elective	259097	Carry out a detailed inspection and repair defects on explosion prevention apparatus	6

NotebookLM

International Application: The French Brevet de Technicien Supérieur (BTS) in Electrotechnics

The system's architecture is adaptable to diverse international standards, including European vocational qualifications. It breaks down complex roles into a granular set of professional activities and certified competencies.

Professional Activities

- **Étude - Conception préliminaire** *Preliminary study & design*
- **Conception - étude détaillée du projet** *Detailed project design*
- **Analyse – diagnostic** *Analysis – diagnostic*
- **Maintenance d'une installation électrique** *Maintenance of an electrical installation*
- **Conduite de projet/chantier** *Project management*
- **Réalisation : installation – intégration** *Realization: installation – integration*
- **Mise en service** *Commissioning*
- **Communication** *Communication*

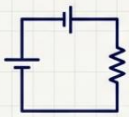
Certified Competencies

- **Modéliser le comportement de tout ou partie d'un ouvrage** *Model system behavior*
- **Dimensionner les constituants** *Dimension components*
- **Proposer l'architecture d'un ouvrage** *Propose system architecture*
- **Gérer et conduire le projet/chantier** *Manage the project*
- **Réaliser un diagnostic de performance** *Perform a diagnostic*

NotebookLM

Bridging Didactics and Practice: The UniTrain-I and InsTrain Simulation Environment

The system integrates with hands-on training platforms like the Lucas-Nülle UniTrain and InsTrain systems. Practical skills—from fault simulation in building automation to diagnostics on three-phase systems—are logged, evaluated, and certified.



DC Technology

AC Technology

Three-Phase Technology

KNX® Building Automation

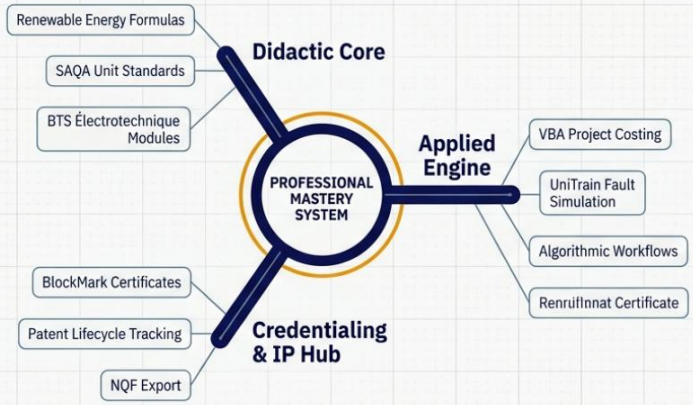
```
' Module: UniTrainICredentialTracker
' Purpose: Automate training progress, fault simulation, and credentialing

Type UniTrainTrainee
    Name As String
    CourseCode As String
    DC_Module As Boolean
    AC_Module As Boolean
    ThreePhase_Module As Boolean
    FaultsResolved As Integer
    TotalFaults As Integer
    CertificationStatus As String
End Type
```

NotebookLM

A Complete System of Systems for Professional Mastery

By integrating the Didactic Core, Applied Engine, and Credentialing Hub, the platform creates a closed-loop system for continuous development. Every skill learned is applied, every application is measured, and every achievement is verifiably certified.



Key Value Propositions

- **Audit-Grade Traceability**: From lesson plan to final credential.
- **Integrated Learning**: Seamlessly connecting theory, simulation, and practice.
- **Verifiable Credentials**: Portable, secure, and mapped to global standards.
- **Lifelong Portfolio Management**: A dynamic record of career achievement and innovation.

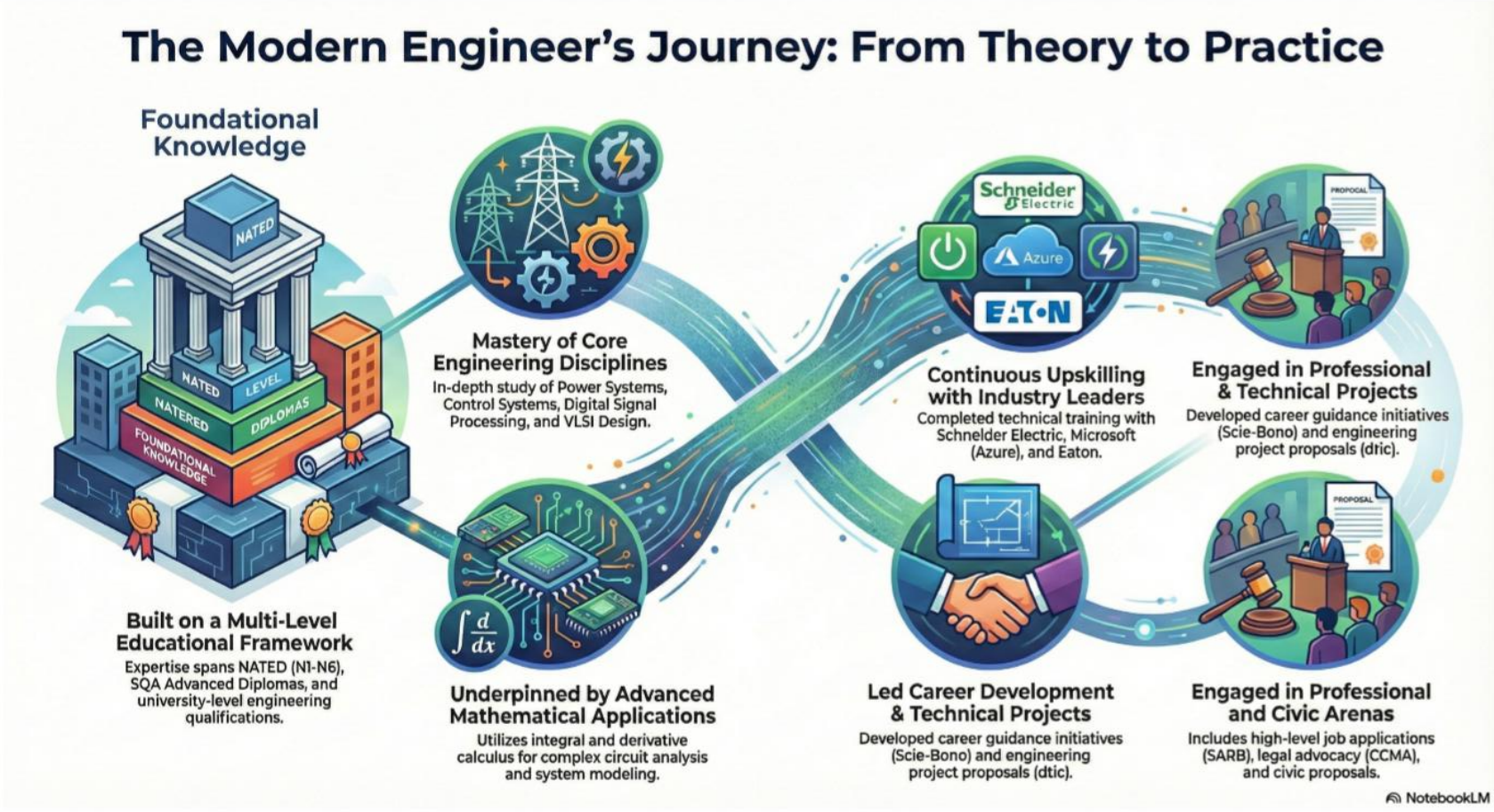
NotebookLM

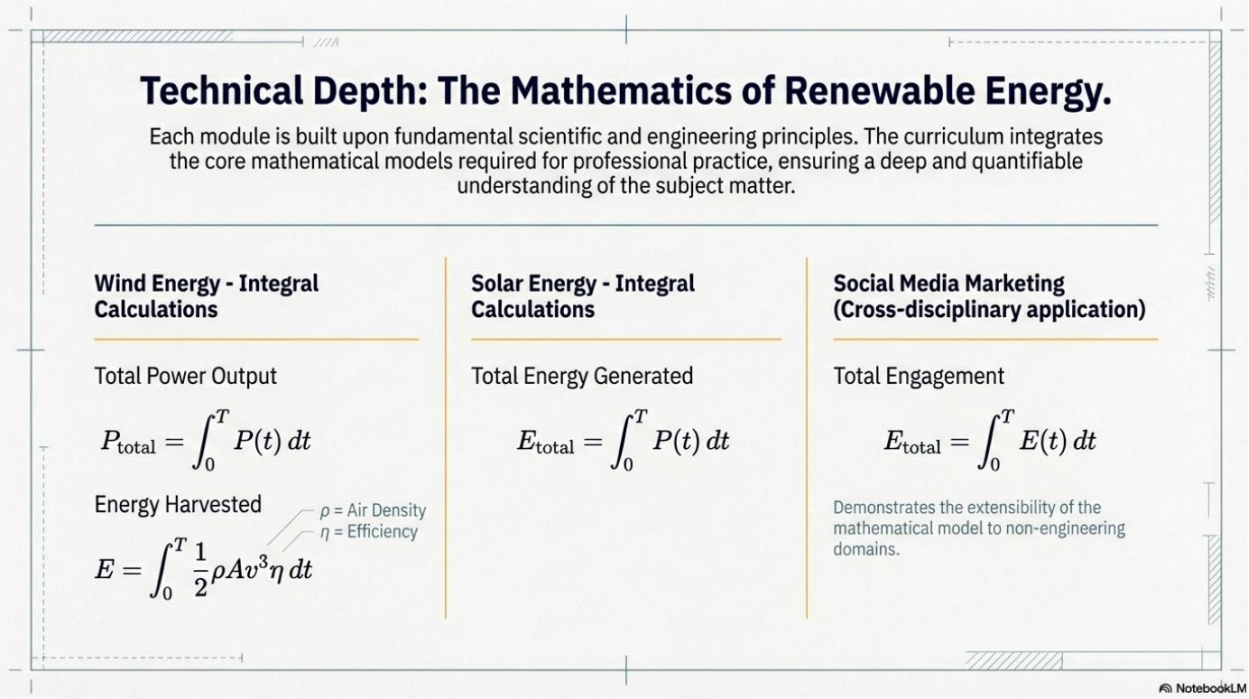
The Professional's Lifelong Ledger

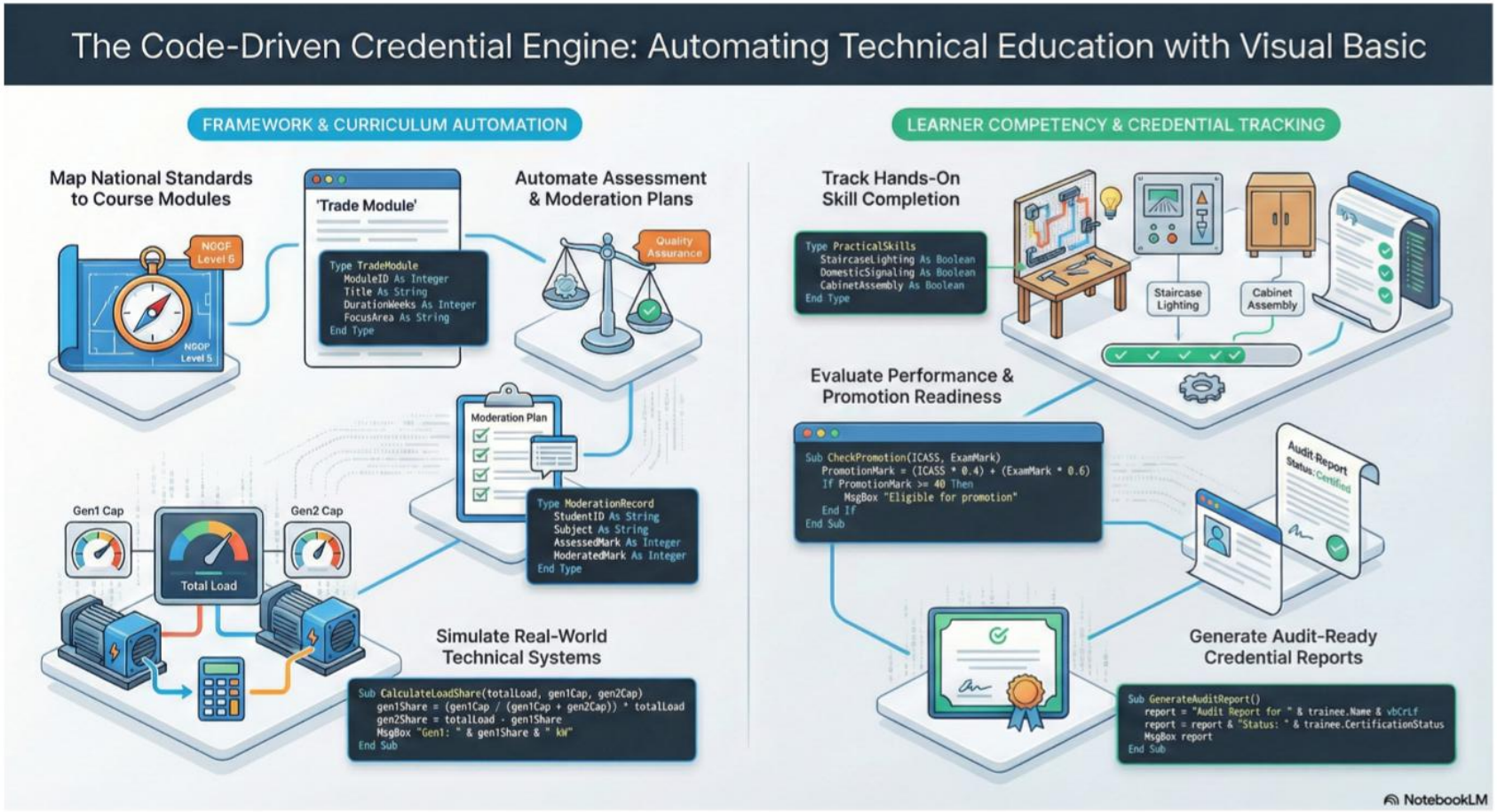
This is more than a system; it is a permanent, dynamic, and verifiable record of an individual's accumulated knowledge, practical skill, and innovative contributions. It is the definitive ledger of human potential, realized and proven.

Building the architecture for proven expertise.

NotebookLM


The Modern Engineer's Journey: From Theory to Practice
Foundational Knowledge
NATED
NATED LEVEL
NATERED DIPLOMAS
FOUNDATIONAL KNOWLEDGE
Built on a Multi-Level Educational Framework
Expertise spans NATED (N1-N6), SQA Advanced Diplomas, and university-level engineering qualifications.
Mastery of Core Engineering Disciplines
In-depth study of Power Systems, Control Systems, Digital Signal Processing, and VLSI Design.
$\int \frac{d}{dx}$
Underpinned by Advanced Mathematical Applications
Utilizes integral and derivative calculus for complex circuit analysis and system modeling.
Schneider Electric
Azure
EATON
Continuous Upskilling with Industry Leaders
Completed technical training with Schnelder Electric, Microsoft (Azure), and Eaton.
Led Career Development & Technical Projects
Developed career guidance initiatives (Scie-Bono) and engineering project proposals (dtic).
PROPOSAL
Engaged in Professional & Technical Projects
Developed career guidance initiatives (Scie-Bono) and engineering project proposals (dtic).
PROPOSAL
Engaged in Professional and Civic Arenas
Includes high-level job applications (SARB), legal advocacy (CCMA), and civic proposals.
NotebookLM


Technical Depth: The Mathematics of Renewable Energy.
Each module is built upon fundamental scientific and engineering principles. The curriculum integrates the core mathematical models required for professional practice, ensuring a deep and quantifiable understanding of the subject matter.
Wind Energy - Integral Calculations
Total Power Output
$P_{\text{total}} = \int_0^T P(t)\,dt$
Energy Harvested
$E = \int_0^T \frac{1}{2}\rho A v^3 \eta\,dt$
ρ = Air Density
η = Efficiency
Solar Energy - Integral Calculations
Total Energy Generated
$E_{\text{total}} = \int_0^T P(t)\,dt$
Social Media Marketing (Cross-disciplinary application)
Total Engagement
$E_{\text{total}} = \int_0^T E(t)\,dt$
Demonstrates the extensibility of the mathematical model to non-engineering domains.
NotebookLM


The Code-Driven Credential Engine: Automating Technical Education with Visual Basic
FRAMEWORK & CURRICULUM AUTOMATION
LEARNER COMPETENCY & CREDENTIAL TRACKING
Map National Standards to Course Modules
NQQF Level 6
NQQF Level 5
'Trade Module'
Type TradeModule
ModuleID As Integer
Title As String
DurationWeeks As Integer
FocusArea As String
End Type
Automate Assessment & Moderation Plans
Quality Assurance
Moderation Plan
Type ModerationRecord
StudentID As String
Subject As String
AssessedMark As Integer
ModeratedMark As Integer
End Type
Gen1 Cap
Total Load
Gen2 Cap
Simulate Real-World Technical Systems
Sub CalculateLoadShare(totalLoad, gen1Cap, gen2Cap)
gen1Share = (gen1Cap / (gen1Cap + gen2Cap)) * totalLoad
gen2Share = totalLoad - gen1Share
MsgBox "Gen1: " & gen1Share & " kW"
End Sub
Track Hands-On Skill Completion
Type PracticalSkills
StaircaseLighting As Boolean
DomesticSignaling As Boolean
CabinetAssembly As Boolean
End Type
Staircase Lighting
Cabinet Assembly
Evaluate Performance & Promotion Readiness
Sub CheckPromotion(ICASS, ExamMark)
PromotionMark = (ICASS * 0.4) + (ExamMark * 0.6)
If PromotionMark >= 40 Then
MsgBox "Eligible for promotion"
End If
End Sub
Audit Report
Status: Certified
Generate Audit-Ready Credential Reports
Sub GenerateAuditReport()
report = "Audit Report for " & trainee.Name & vbCrLf
report = report & "Status: " & trainee.CertificationStatus
MsgBox report
End Sub
NotebookLM

Convergence & Resilience: A Profile in Systems Engineering and Applied Problem Solving

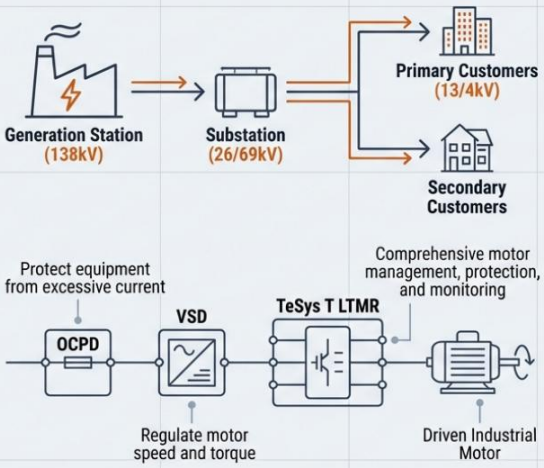
An integrated approach to solving complex challenges at the intersection of

An integrated approach to solving complex challenges at the intersection of electrical engineering, software development, and systems analysis.

NotebookLM

Mastering Electrical Power Systems from Generation to Industrial Application

- **Power Distribution Architecture**: Designing and analyzing systems from generation stations (138kV) through substations (26kV, 69kV) to primary (13kV, 4kV) and secondary customers.
- **Industrial Motor Control**: Implementation and configuration of motor management controllers (e.g., TeSys T LTMR), including wiring diagrams, parameter setting, and safety considerations (OCPD, VSD).
- **PV Installation Design**: System planning for photovoltaic installations ranging from 6.5kW to 250kW grid-tied systems.
- **Component & System Schematics**: Creating detailed electrical engineering diagrams for circuits, logic, and industrial controls.



NotebookLM

Applying Software to Automate and Solve Complex Operational Problems

Automated Student Registration System (Excel/VBA)

A database-driven system in Excel and VBA for managing student registrations.

- UserForm for data entry (`frm dataentry`), validation checks (`Function ValidEntry()`), data submission to a database sheet, and form reset capabilities (`Sub Reset_Form()`).

Validation Snippet (VBA)

```
Function ValidEntry() As Boolean
   ValidEntry = True
   If Trim(.txtStudentName.Value) = "" Then
      MsgBox "Please enter Student's name."
      .txtStudentName.BackColor = vbRed
      ValidEntry = False
      Exit Function
   End If
End Function
```

Functional Calculator Application (Visual Basic)

A calculator built in Visual Basic to demonstrate UI design and event-driven programming.

- Interface with text fields and buttons. Logic handles mathematical operations using `Select case [operator]` and variable declarations (`Dim operand1 as double`).

Core Logic (Visual Basic)

```
Select Case [operator]
   Case "+"
      Result = operand1 + operand2
      txtinput.text = Result.ToString
   Case "*"
      Result = operand1 * operand2
      txtinput.text = Result.ToString
End Select
```

NotebookLM

Bridging Hardware and Software Through Industrial PLC Communication

Command string:

- **Project Focus:** PLC Communication Programme for Data Read/Write Operations (C#).
- **Core Functionality:** Establishes a connection to a PLC via IP address, then constructs and sends specific command strings to read or write data to PLC memory addresses.

NotebookLM

Case Study: The Three-Phase Smart Meter

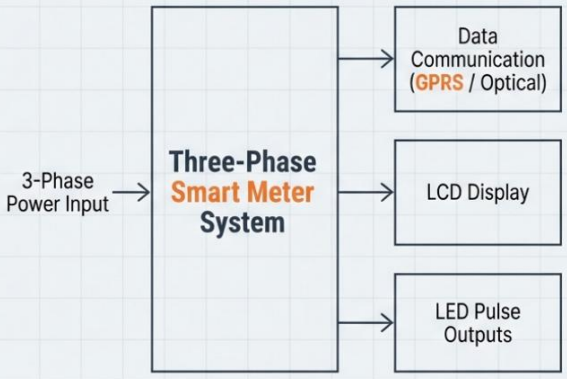
A comprehensive project demonstrating the convergence of embedded systems hardware, firmware architecture, and electrical theory.

Project Overview

- A four-quadrant, three-phase AC static watt-hour smart meter designed for low-power, real-time operation.
- Integrates metering algorithms, data processing, multiple communication interfaces, and tamper detection features.

Key Project Components

Hardware Design | Software & Firmware | Metering Theory | Bill of Materials | Performance & Accuracy



NotebookLM

Grounded in Fundamental Electrical Theory and Built to Precise Specifications

Core Metering Principles

Active Energy: $W_H = \int u(t) \cdot i(t)\, dt$

Reactive Energy: $varh = \int u(t\text{-}90°) \cdot i(t)\, dt$

Active Power: $P = \frac{1}{T} \int u(t) \cdot i(t)\, dt$

Apparent Power: $S = I_{RMS} \cdot U_{RMS}$

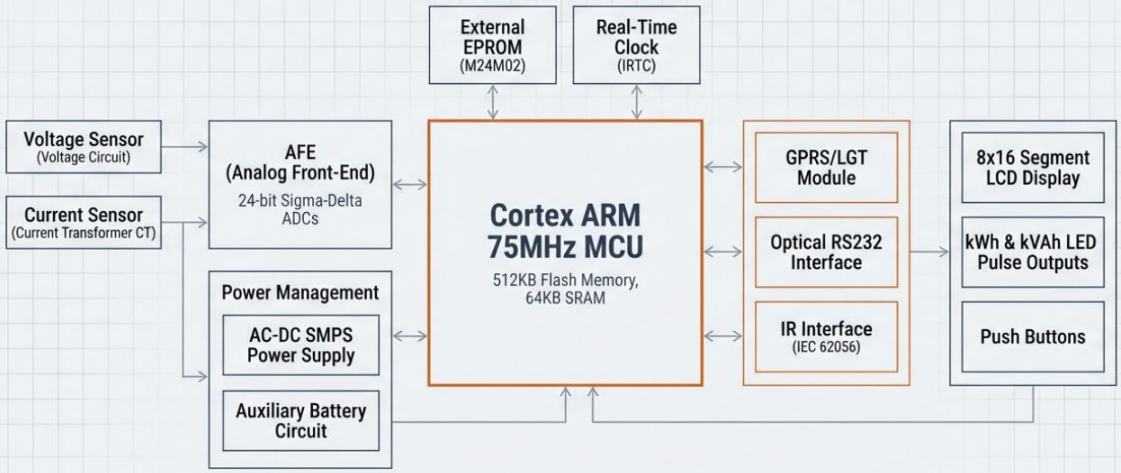
$S = \sqrt{P^2 + Q^2}$

Key Technical Specifications

Type	Three-Phase AC Static Watt-Hour Smart Meter
Accuracy	Class 0.5 (0.5%)
Nominal Voltage	240 VAC (+20%)
Current Range	0-60A (10A nominal, 72A dynamic range)
Frequency	50Hz (±5%)
Communication	GPRS Module (1x SIM card) & IEC 62056 Infrared Interface
Data Memory	256kb External EPROM (M24M02)
Functionality	Measures V, A, kW, kVAR, VA, kWh (import/export), kVAh (import/export)

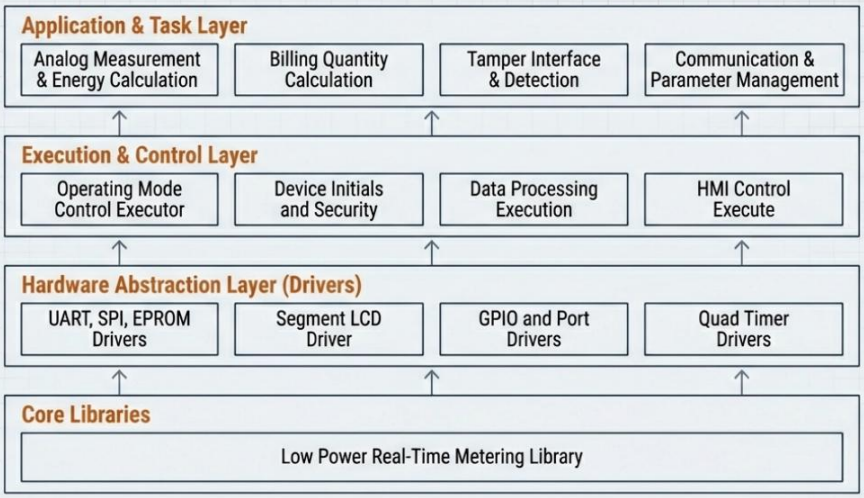
NotebookLM

Designing the Smart Meter: A Detailed Hardware & Component Architecture



NotebookLM

Engineering the Intelligence: A Multi-Layered Firmware Architecture



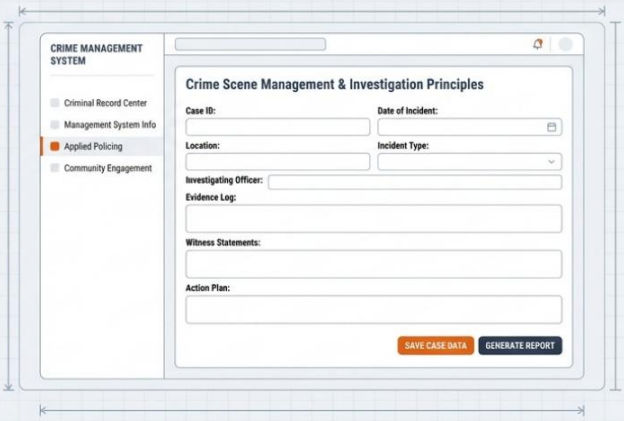
NotebookLM

Applying Systems-Thinking to Public Safety and Crime Management

Project Concept: A Web-Based Crime Management System for Police Operations.

System Modules

- **Criminal Record Center:** Centralized database for criminal records.
- **Management System Information:** Tools for operational analysis and reporting.
- **Applied Policing & Crime Resolution:** Modules for case management and investigation principles.
- **Community Policing & Engagement:** Features to facilitate communication and information sharing with citizens.
- **Experimental Applications:**
  - Simulate crime data entry and analysis.
  - Develop crime heatmaps to identify hotspots and allocate patrols effectively.



NotebookLM

Demonstrating Tenacity Through Direct Engagement with Complex Legal and Administrative Systems

A Record of Formal System Navigation: This dossier presents a history of engaging with various governmental and judicial bodies to address professional and administrative disputes.

Case Context: Filings relate to issues including workplace violence, educational backlogs, work permit conditions, and enforcement of CCMA awards.

High Court of South Africa

- Appellant in Appeal Case Numbers **Ja 37/19** and **Ja 2461/15**.

Department of Justice (DOJ) Online Portals

- Multiple Protection Order applications (e.g., URN **4702024FCV001046**) related to workplace disputes.
- Numerous Civil Law filings (e.g., URNs **1042024CIV004539**, **112024CIV000013**, etc.).

Commission for Conciliation, Mediation and Arbitration (CCMA)

- Engaged in multiple proceedings, including review applications and rescission rulings.

Other Engaged Bodies

- Department of Labour
- Department of Higher Education
- **SAQA** (South African Qualifications Authority)
- **PSIRA** (Private Security Industry Regulatory Authority)

NotebookLM

Meticulous Documentation and Process Adherence in Formal Proceedings

Demonstrating a Systematic Approach: The same structured and detail-oriented methodology used in engineering is applied to navigating legal and administrative processes.

Exhibit A: Court Filing Index

Case Ja 37/19

- Notice of motion
- Affidavit in support of application
- Recording transcription
- Application for leave to appeal head argument
- Proof of service

Highlighting the structured, evidence-based nature of legal submissions.

Exhibit B: Formal Application Process

SOUTH AFRICAN POLICE SERVICE
APPLICATION FOR APPOINTMENT

Personal Particulars

Name: Age:
ID Number: ID Name: etc:
Preceesment Number:
Company name:

Career History

Have you ever been found guilty in a disciplinary matter? ☑ YES

Demonstrating compliance with rigorous bureaucratic disclosure requirements.

NotebookLM

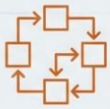
A Unique Convergence of Deep Technical Expertise and Proven Resilience

An engineer who not only designs and builds complex electro-mechanical and software systems but also possesses the demonstrated fortitude to analyze, navigate, and resolve challenges within complex human systems.

Key Capabilities

1. Foundational Engineering: Deep expertise in electrical power, industrial controls, and electronics.

2. Applied Software Development: Versatility in creating practical applications (VBA, VB.NET) and industrial communication protocols (PLC).



3. Integrated Systems Design: Proven ability to architect a complete embedded system, from theoretical concept to hardware and firmware, as shown in the Smart Meter case study.

4. Systemic Resilience: A documented history of methodical, persistent, and direct engagement with legal, administrative, and regulatory frameworks.

UNDERSTANDING PROTECTION ORDERS IN SOUTH AFRICA: YOUR LEGAL PATH TO SAFETY
WHICH PROTECTION ORDER DO YOU NEED?
Domestic Violence Protection Order (DPO)
For abuse from someone you have a domestic relationship with (e.g., family, partner, roommate).
RELATIONSHIP REQUIRED?
Yes, a domestic relationship is required.
PATTERN OF ABUSE?
Requires a pattern of abosive actions.
EXAMPLES:
Physical, sesual, financial, emotional abuss.
Harassment Protection Order (HPO)
Neighbor/Stalker
For abuse from someone you are not in a domestic relationship with (e.g., a neighbor).
RELATIONSHIP REQUIRED?
No relationship is required.
PATTERN OF ABUSE?
A single incident can be sufficient.
EXAMPLES:
Unvented messages, stalking, financial harm.
THE PROCESS TO GET A PROTECTION ORDER
1. APPLY AT THE MAGISTRATE'S COURT
Form 3
Complete the required application form (Form 2) with a detailed affidavit explaining the abuse.
2. OBTAIN AN INTERIM ORDER
INTERIM ORDER
The court reviews your application and may issue a temporary order for immediate protection.
3. SERVE THE ORDER
SERVED
The interim order must be officially served on the respondent by a sheriff or police officer.
4. ATTEND THE COURT HEARING
The court hears evidence to decide whether to grant a permanent, final protection order.
5. WHAT IF THE ORDER IS VIOLATED?
Breaching a protection order is a criminal offense punishable by a fine or up to 5 years in prison.
NotebookLM

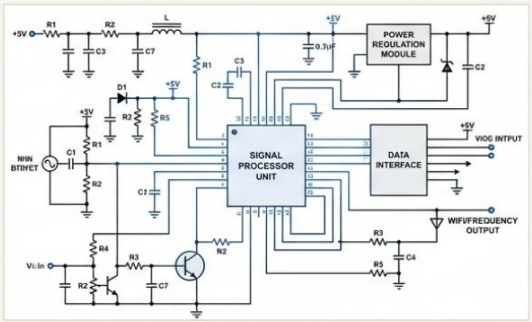
The Labyrinth: Navigating and Reforming South Africa's TVET Landscape

A Practitioner's Case for an Integrated Electrical Engineering Qualification Framework

When the system is flawed, expertise is forged in navigating its complexities. This is the story of that navigation—and the blueprint for a better way forward.

NotebookLM

A Paradox of Prolific Work and Systemic Hurdles



CONFIDENTIAL - EVIDENCE FILE

This dossier chronicles the extensive work of Tshingombe Tshitadi Fiston, an engineer and educator whose journey reveals a critical disconnect. While formal systems presented barriers and rejections, a substantial body of innovative work in electrical engineering, curriculum design, and applied research was consistently produced. This is the evidence of that work.

NotebookLM

Diagnosing a System Marked by Friction and Delay

The Technical and Vocational Education and Training (TVET) system for engineering studies is characterized by systemic irregularities that create significant barriers for learners and lecturers.

Qualification Irregularities

"Nated ncv combination irregularity," non-accredited qualifications, and challenges in recognizing foreign qualifications (SAQA).

Administrative Backlogs

"Slow to challenge factor learning and release resultat printed statement," "marking in progress," and extensive delays in issuing diplomas and certificates from DHET.

Curriculum Misalignment

A gap between theoretical knowledge ("trade theory") and practical, industry-relevant skills required by employers like Eskom and City Power.

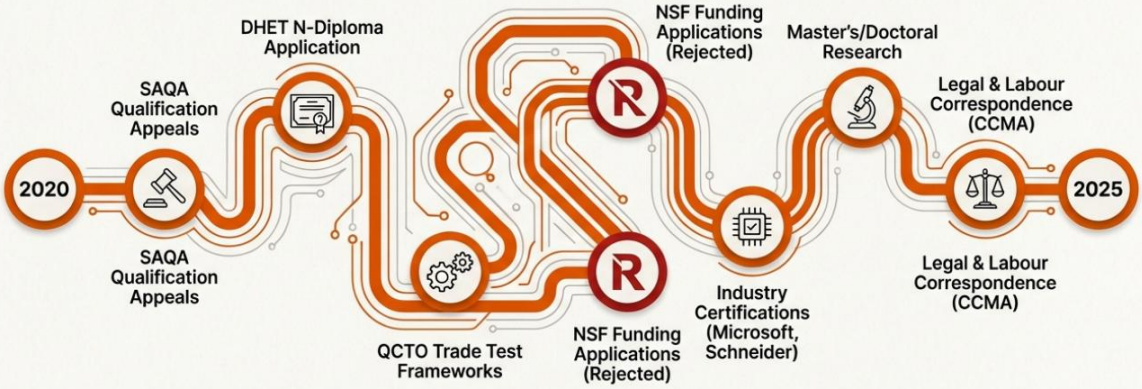
Assessment Inconsistencies

"Non credible process," "irregularite material script," and a lack of standardized, fair assessment policies for Portfolios of Evidence (PoE).

NotebookLM

One Practitioner's Journey Through the Labyrinth

This presentation uses a multi-year case study of navigating the TVET system to diagnose its core challenges and propose a robust, integrated solution. The evidence presented is a direct result of this journey.

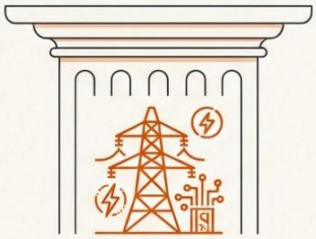


"The author is not just talking about the problem; he is the evidence."

NotebookLM

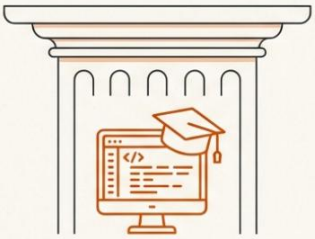
Forging Multidisciplinary Expertise Through Adversity

Navigating the labyrinth of qualifications, funding, and curriculum gaps required the development of a comprehensive skill set far beyond traditional engineering.



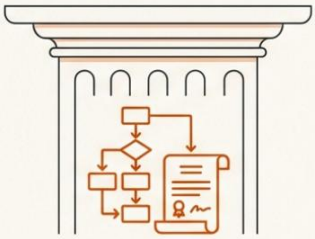
Advanced Engineering & Power Systems

Deepening the core technical domain, with a focus on rural energy, smart grids, and industrial automation.



Digital Systems & Educational Technology

Mastering the digital tools necessary to build modern learning solutions and streamline broken administrative processes.



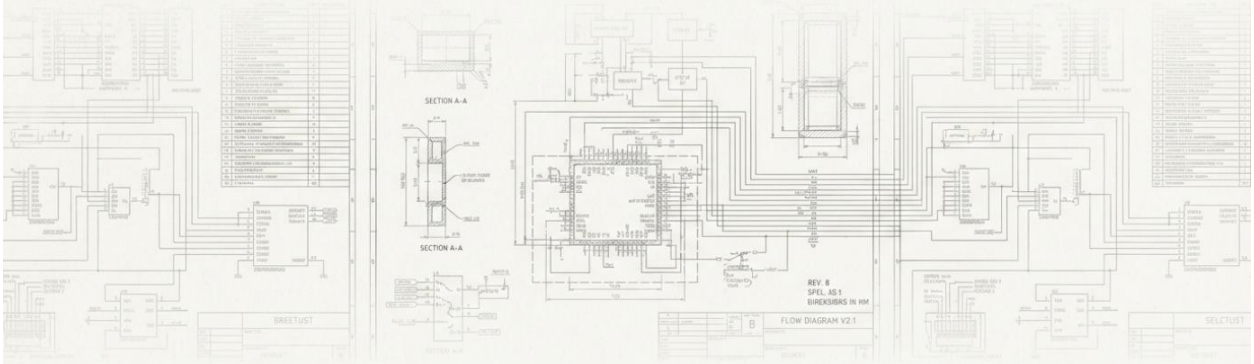
Policy, Pedagogy & Framework Design

Undertaking formal research into the very systems of education, assessment, and qualification that created the initial obstacles.

NotebookLM

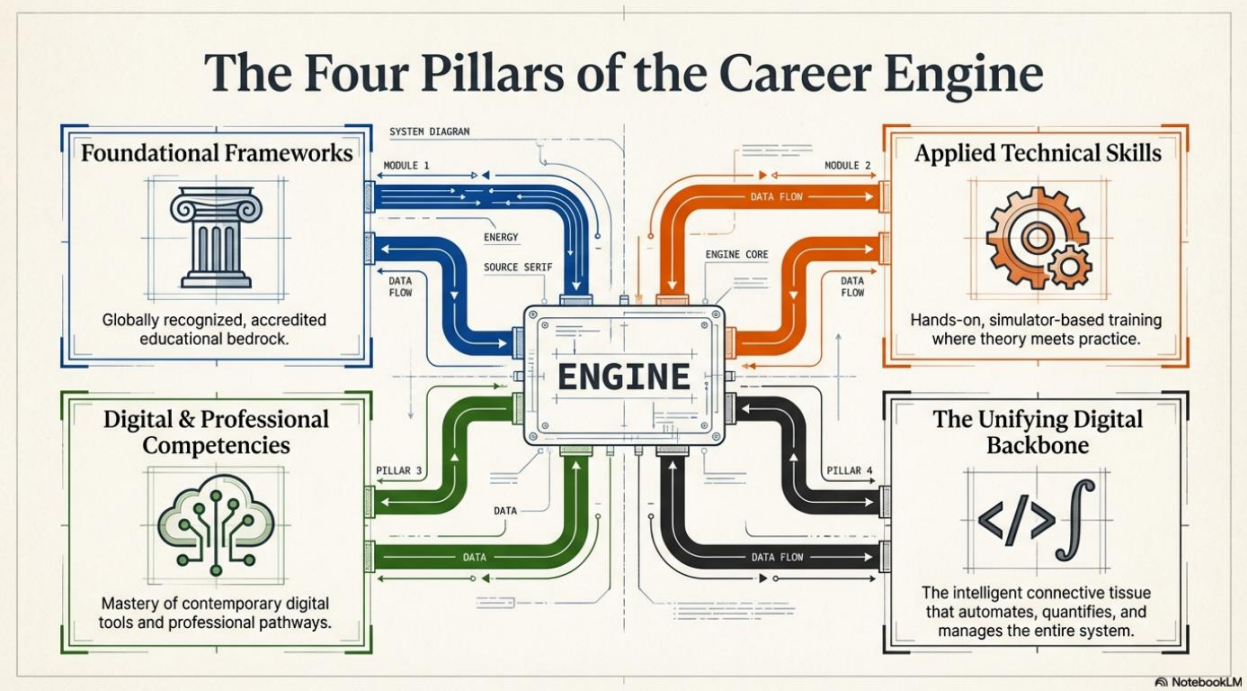
The Audit-Grade Career Engine

A Blueprint for Verifiable Competence



A modular framework that synthesizes formal education, vocational training, and workplace experience into a single, auditable system.

NotebookLM



Building on a Bedrock of Global Academic and Technical Standards

Foundational Frameworks (Pillar 1)

South African Qualifications Authority (SAQA)

Qualification	National Certificate: Electrical Engineering (ID 72071)
Unit Standard ID	259037
Title	Design and install electrical wire ways
Level	NQF Level 3
Credits	8

French Higher Education

BTS Électrotechnique - Compétency Block

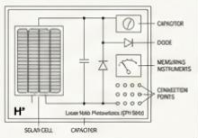
RNCP41007BC01 (in Source Code Pro)

Étude et conception préliminaire d'une installation
(Preliminary study and design of an installation)

Applied Technical Skills (Pillar 2)

German Didactic Systems (Lucas-Nülle)

Leveraging the UniTrain and InsTrain modular learning systems for hands-on experimentation in electronics, automation, and renewable energy. The system includes guided fault simulation and real-time diagnostics.

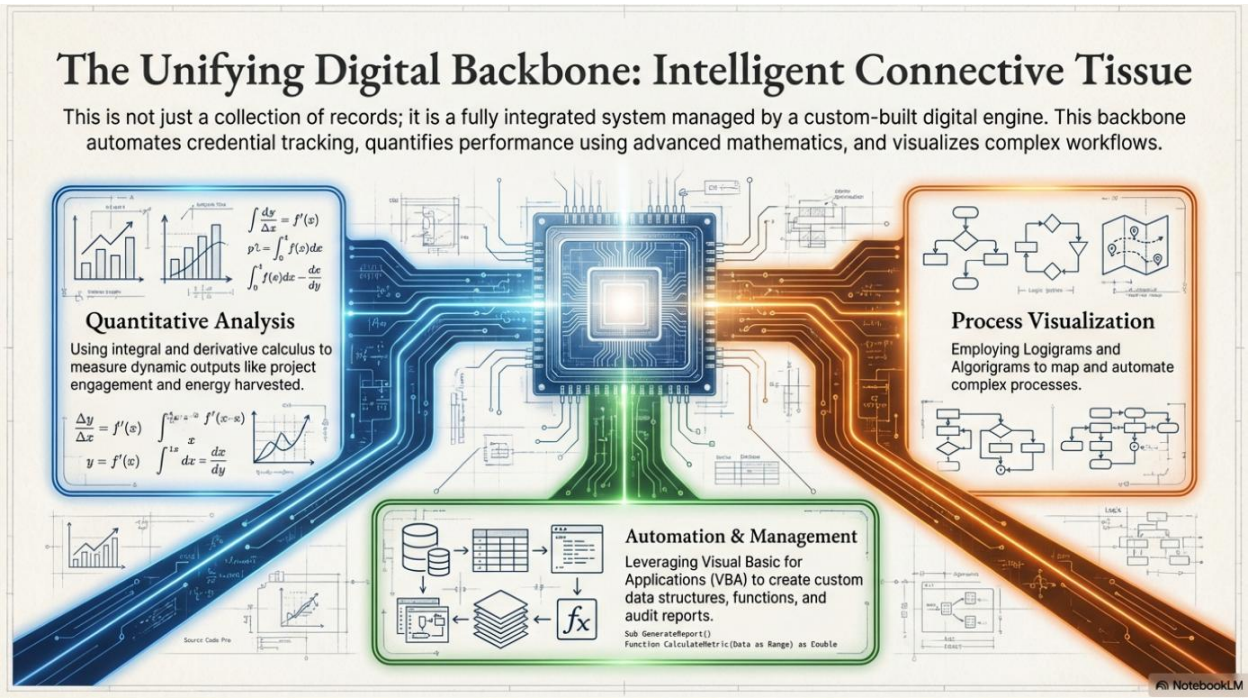


Indian Vocational Training (ITI)

Incorporating the National Instructional Media Institute (NIMI) curriculum for Electrician Trade (NSQF Level 5), which emphasizes structured practical exercises in wiring, soldering, and workshop safety.

NIMI Curriculum: Electrician (NSQF Level 5)	
Module No.:	3
Module Title:	Wires, Joints - Soldering - U.G. Cables
Allocated Time:	125 Hrs

NotebookLM


The Unifying Digital Backbone: Intelligent Connective Tissue
This is not just a collection of records; it is a fully integrated system managed by a custom-built digital engine. This backbone automates credential tracking, quantifies performance using advanced mathematics, and visualizes complex workflows.
Quantitative Analysis
Using integral and derivative calculus to measure dynamic outputs like project engagement and energy harvested.
Process Visualization
Employing Logigrams and Algorigrams to map and automate complex processes.
Automation & Management
Leveraging Visual Basic for Applications (VBA) to create custom data structures, functions, and audit reports.
Sub GenerateReport()
Function CalculateMetric(Data as Range) as Double
NotebookLM

The Engine's Logic: Quantifying Performance with Code and Calculus

Credential & Calculation Tracking

```
' Module: CredentialDashboard
Type CalculationRecord
    DateStamp As Date
    Topic As String
    MethodUsed As String
    SimulationTool As String
    ResultSummary As String
    Award As String
    RewardPoints As Integer
End Type
```

A Quantitative Approach

Total Engagement Over Time:

$$E_{\text{total}} = \int_0^T E(t)\,dt$$

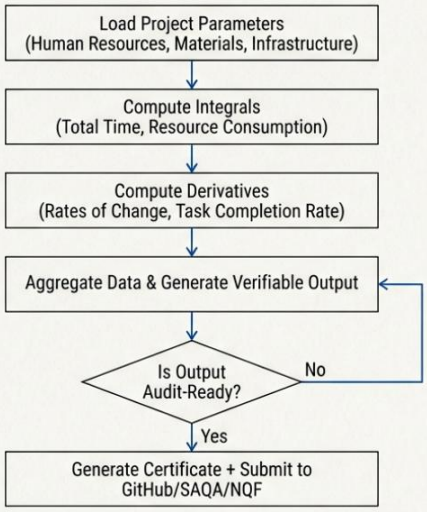
Total Energy Harvested (Wind):

$$E = \int_0^T \frac{1}{2}\rho A v^3 \eta dt$$

Rate of Task Completion: $\frac{dN}{dt}$

NotebookLM

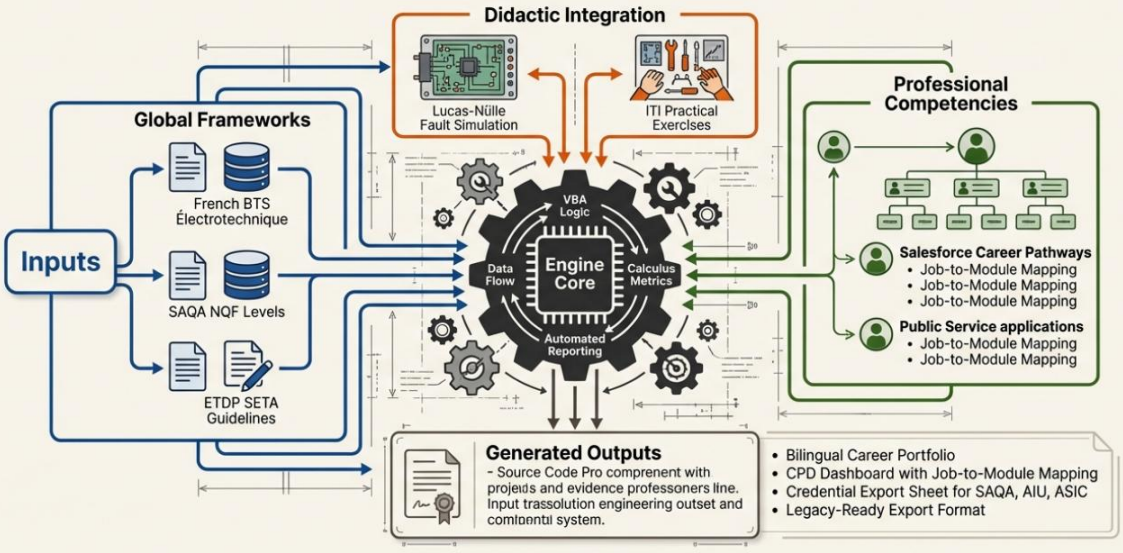
Visualizing the Workflow: An Automated, End-to-End Process



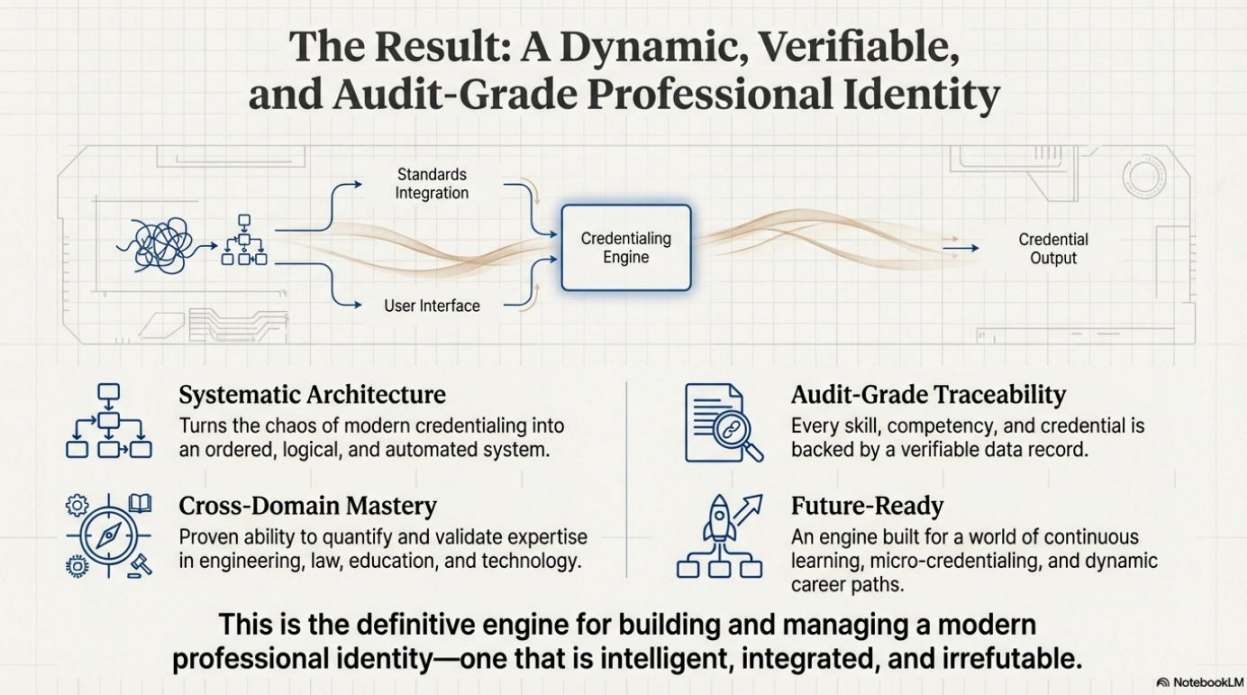
This automated workflow ensures every credential is the product of a traceable, data-driven, and verifiable process.

NotebookLM

The Complete Blueprint: A Synthesized Career Dashboard



NotebookLM


The Result: A Dynamic, Verifiable, and Audit-Grade Professional Identity
Standards Integration
User Interface
Credentialing Engine
Credential Output
Systematic Architecture
Turns the chaos of modern credentialing into an ordered, logical, and automated system.
Audit-Grade Traceability
Every skill, competency, and credential is backed by a verifiable data record.
Cross-Domain Mastery
Proven ability to quantify and validate expertise in engineering, law, education, and technology.
Future-Ready
An engine built for a world of continuous learning, micro-credentialing, and dynamic career paths.
This is the definitive engine for building and managing a modern professional identity—one that is intelligent, integrated, and irrefutable.
NotebookLM

The Blueprint: An Integrated Framework for TVET Engineering Studies

Vision: To create a responsive, technology-enabled TVET ecosystem that seamlessly integrates curriculum, practical experience, and industry needs to produce verifiably competent and employable engineering professionals.

Key Principles

- ✓ **Outcome-Oriented:** Success is measured by real-world competency, not just theoretical exams.
- ✓ **Industry-Validated:** Curriculum and assessments are co-designed and constantly validated by industry partners.
- ✓ **Digitally Integrated:** Leveraging technology (LMS, e-Portfolios, AI) to ensure efficiency, transparency, and data-driven improvement.
- ✓ **Holistic Development:** Combining technical skills with soft skills (communication, problem-solving) and professional ethics.

NotebookLM

CONFIDENTIAL - EVIDENCE FILE

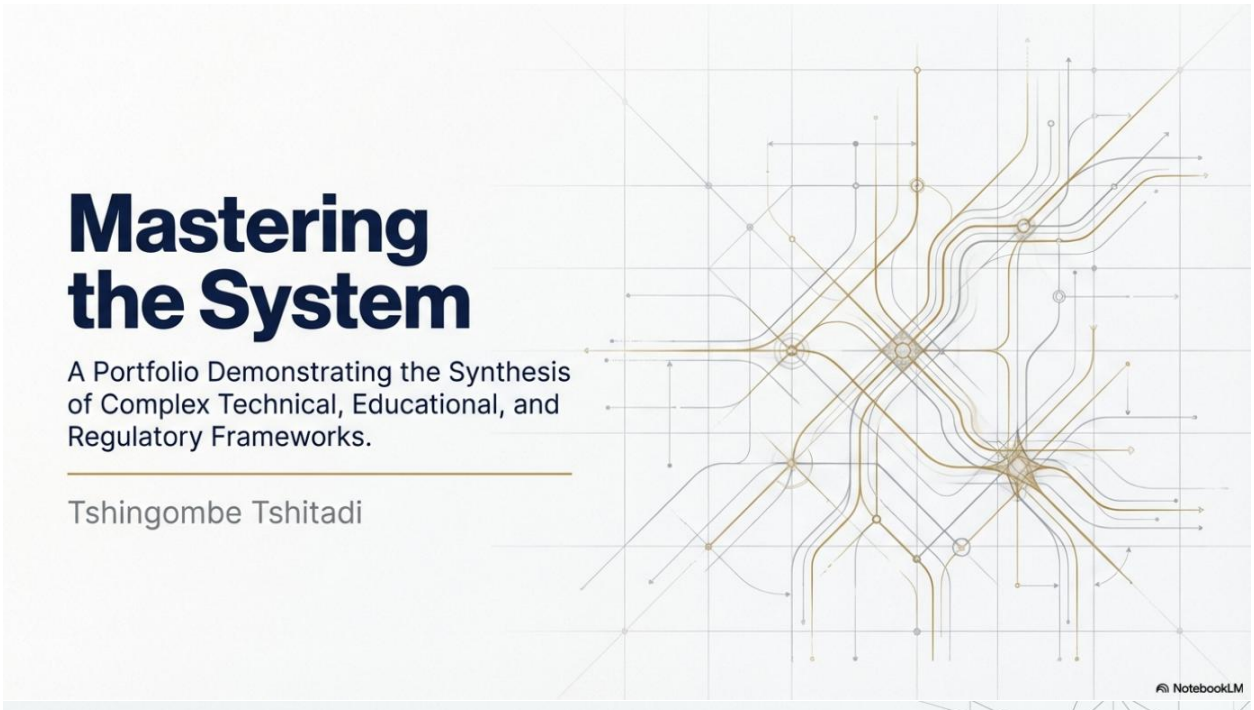
The Case for a New Model of Expertise

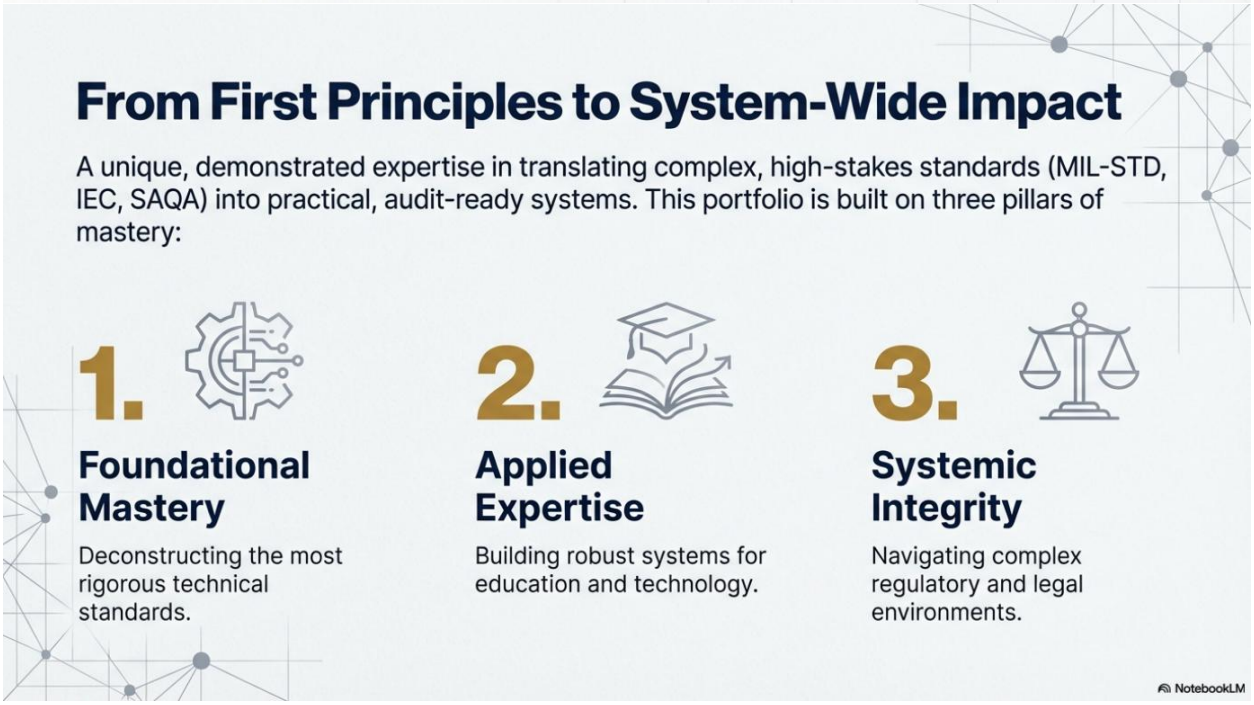
- The evidence demonstrates a sustained, high-level output of technical and pedagogical work against significant systemic friction.
- This journey has forged a unique, multi-disciplinary expertise that integrates core engineering, curriculum design, and a deep understanding of global qualification systems.
- The challenge is no longer one of validation, but of recognition and engagement. The work stands on its own merit.

Engage the expertise. Recognize the innovation.

Name: Tshingombe Tshitadi Fiston
Email: tshingombefiston@gmail.com
Website: www.tshingombefiston.com
Profile: archive.org/details/@rdferz

NotebookLM


Mastering the System
A Portfolio Demonstrating the Synthesis of Complex Technical, Educational, and Regulatory Frameworks.
Tshingombe Tshitadi
NotebookLM


From First Principles to System-Wide Impact
A unique, demonstrated expertise in translating complex, high-stakes standards (MIL-STD, IEC, SAQA) into practical, audit-ready systems. This portfolio is built on three pillars of mastery:
1.
Foundational Mastery
Deconstructing the most rigorous technical standards.
2.
Applied Expertise
Building robust systems for education and technology.
3.
Systemic Integrity
Navigating complex regulatory and legal environments.
NotebookLM

Architecting Compliance from the Ground Up.

An analysis of MIL-STD-11991B showcases the ability to interpret and implement foundational requirements for military systems. The focus is on establishing non-negotiable traceability as the bedrock of system reliability.

PM&P Incoming Inspection Data Requirements (MIL-STD-11991B Excerpt)

Requirement	EEE parts	Mechanical parts	Materials	Notes
Database fields maintained for life of program	Yes	Yes	Yes	Lot date code, purchase order requirements, C of C data
DPA (Destructive Physical Analysis)	Categories A–B required (one per lot for specific device types)	—	—	
PIND (Particle Impact Noise Detection)	Categories A–C, T	—	—	

This establishes non-negotiable traceability as the foundation of system reliability.

NotebookLM

Engineering for Failure Prevention, Not Just Performance.

Expertise in component-level reliability is demonstrated through the principles of derating and environmental stress analysis. This involves connecting the physical limits of individual components to the operational realities of the complete system.

Table AVI. Microcircuit Derating Factors

Critical Stress Parameter	Digital	Linear
Maximum Junction Temperature	40°C below max rating	40°C below max rating
Power Dissipation	0.80	0.75

Connecting component-level physics to system-level environmental realities.

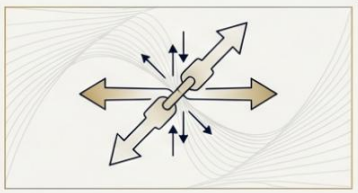
Table II. Life Cycle Stresses

Stress	Application Consideration
Temperature limits	Usage outside manufacturer's specified limits discouraged; damage occurs if exceeded.
Mechanical vibration	Long-term vibration exposure can cause damage.

NotebookLM

Ensuring Repeatability and Rigor in Physical Testing

Knowledge of standardized testing methodologies is crucial for validating engineering designs. The following examples from MIL-STD-202G illustrate the breadth of verification expertise.

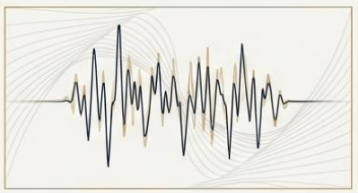


Method 211A - Terminal Strength

Ensures terminals and their attachments withstand mechanical stresses during installation/disassembly.

Method 217A - PIND

Detects free-moving particulate contaminants inside sealed devices to prevent latent failures.



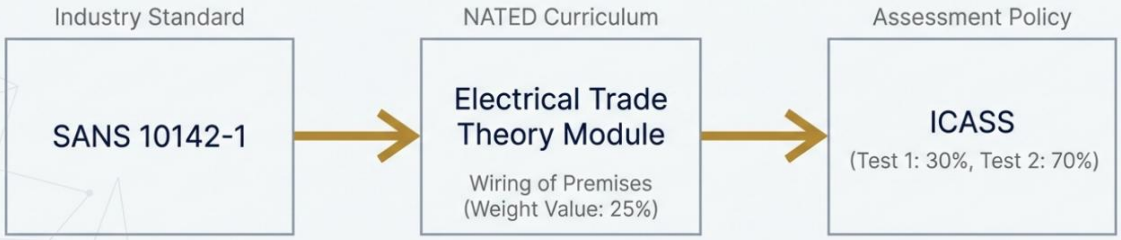
Method 214A - Random Vibration

Determines the ability of components to withstand random vibration environments typical of aircraft, missiles, and tanks.

NotebookLM

Translating Industry Requirements into Educational Frameworks

True system mastery involves not only understanding standards but also engineering the curricula that teach them. This requires mapping industry regulations like SANS 10142-1 directly to educational modules and assessment policies as defined by SAQA and ICASS.



NotebookLM

Case Study: Validating a Curricuum in the Real World.
A research and assessment initiative involving NATED engineering colleges (including St Peace College) and City Power. The project aimed to collect portolio evidence and validate curriculum content against real-world job requirements in the municipal electricity sector.
"Visited city power site, job work, subject engineering electrical portfolio evidence..."
"Research scope career project job formal duty engineering..."
Desired Outcome: Bridging theory and practice for job-ready graduates.
NotebookLM

A Commitment to Continuous Mastery in a Digital-First World
Proactively building skills in AI, automation, and cloud platforms to meet the demands of modern engineering and system design.
Microsoft
943
Modules completed
756
hr 38 min of training
Featured Learning Path:
APL-2007: Accelerate app development by using GitHub Copilot
salesforce
Trailblazer Rank:
Ranger
Superbadge Earned:
Agentforce for Service
NotebookLM

A Portfolio of Verifiable Achievement.

A documented history of professional engagement and applications with leading firms in the engineering and energy sectors, demonstrating consistent alignment with industry leaders.

Navigating Complex Regulatory and Labor Systems with Rigor.

Experience includes formal engagement with regulatory and statutory bodies to ensure adherence to established legal and procedural standards in labor relations and security sector compliance.

CCMA
Commission for Conciliation, Mediation and Arbitration

Ensuring procedural fairness in labor relations (Case Ref: GAJB6808-15).

PSiRA
Private Security Industry Regulatory Authority

Upholding statutory obligations in the private security sector.

Engaging with law enforcement to document and report on civil and criminal matters.

NotebookLM

Demanding Systemic Accountability Through Documentation.

The same principles of evidence, traceability, and auditability that govern engineering compliance are applied to navigating regulatory systems. This reflects a core belief that fair outcomes are the product of transparent and well-documented processes.

“A belief that fair outcomes are the prroduct product of transparent and well-documented processes.”

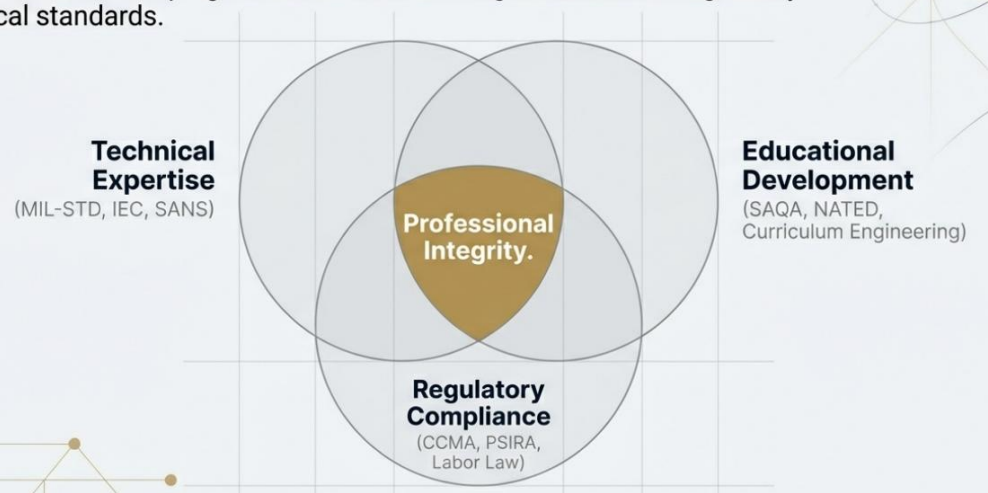
My Civil Cases

Casts	created	Service Type	Case Type
Lorem Ipsum, Case 123	Lorem Ipsum, Date	Lorem Ipsum, Service	Lorem Ipsum, Type
	Lorem Ipsum, Date	Lorem Ipsum, Service	Lorem Ipsum, Type
	Lorem Ipsum, Date	Lorem Ipsum, Service	Lorem Ipsum, Type
	Date	Lorem Ipsum, Service	Lorem Ipsum, Type
Lorem Ipsum, Case 122	Lorem Ipsum, Date	Lorem Ipsum, Service	Lorem Ipsum, Type
Lorem Ipsum, Case 123	Lorem Ipsum, Date	Lorem Ipsum, Service	Lorem Ipsum, Type
Lorem Ipsum, Case 124	Lorem Ipsum, Date	Lorem Ipsum, Service	Lorem Ipsum, Type
Lorem Ipsum, Case 125	Lorem Ipsum, Date	Lorem Ipsum, Service	Lorem

NotebookLM

A Holistic Approach to Professional Integrity.

True professional integrity exists at the intersection of technical mastery, a commitment to developing others, and unwavering adherence to regulatory and ethical standards.



NotebookLM

Acknowledged for Contributions to Career Innovation and Mentorship.

Formal recognition for innovative contributions to career development, curriculum engineering, and mentorship within the South African vocational education landscape.

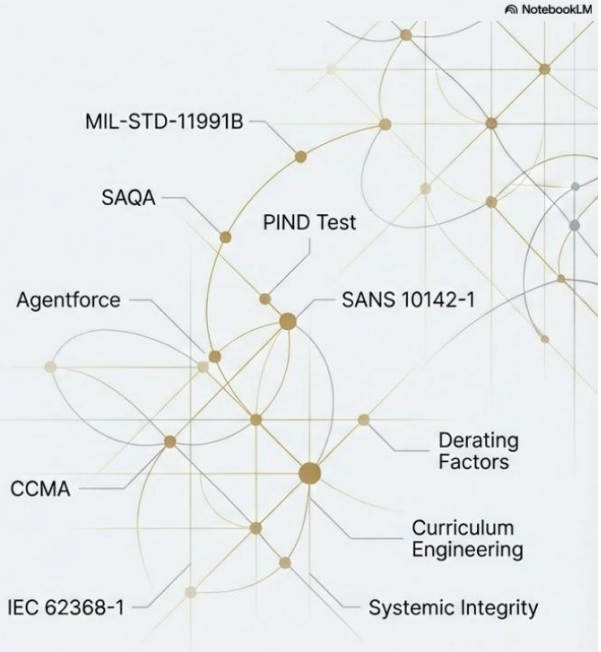
DHET-SAQA Discovery Award Prize for Career Novation

Gold Award Badge for research innovation in NATED/NCV curriculum engineering, moderator/facilitator excellence, career mentorship, diploma discovery, and didactic material development in electrical engineering.

NotebookLM

A Proven Capacity to Master, Apply, and Uphold Complex Systems.

A summary that reconnects the three pillars, showing how they are not separate skills but integrated facets of a single, powerful competency in system building and synthesis.



NotebookLM

Ready to Apply a Systems Approach to New Challenges
Tshingombe Tshitadi
tshingombefiston@gmail.com
[Placeholder for LinkedIn or Professional Portfolio URL]
NotebookLM

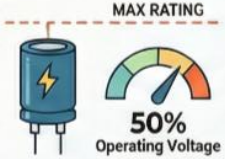
The Pillars of Engineering Compliance: Parts & People

A dual compliance system in regulated engineering fields requires strict adherence to standards for both physical components and the formal qualifications of professionals.

Pillar 1: Managing Parts, Materials & Processes

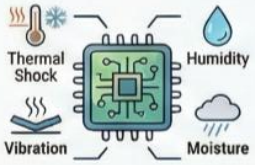
Rigorous Lifecycle Management is Mandatory.

Component Derating Ensures Reliability.

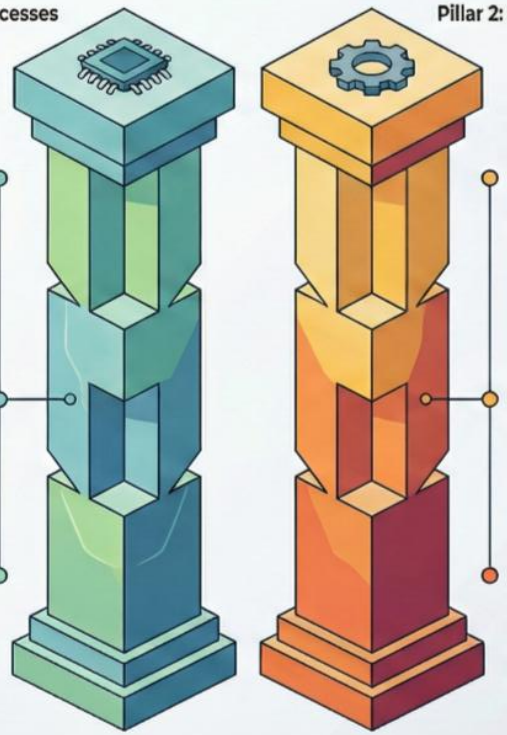


Operating parts below their maximum ratings (e.g., voltage at 50%) prevents premature failure.

Systems Must Survive Harsh Environmental Stresses.



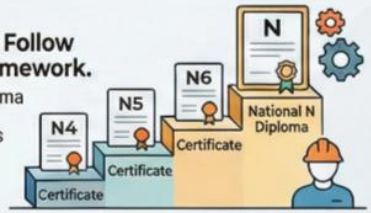
Standardized tosts simulate real-world conditions like thermal shock, vibration, humidity, and moisture.



Pillar 2: Managing Professional Qualifications & Assessment

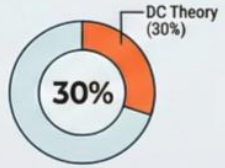
Qualifications Follow a National Framework.

A National N Diploma requires N4, N5, and N6 certificates plus practical experience.



Assessments are Based on Weighted Modules.

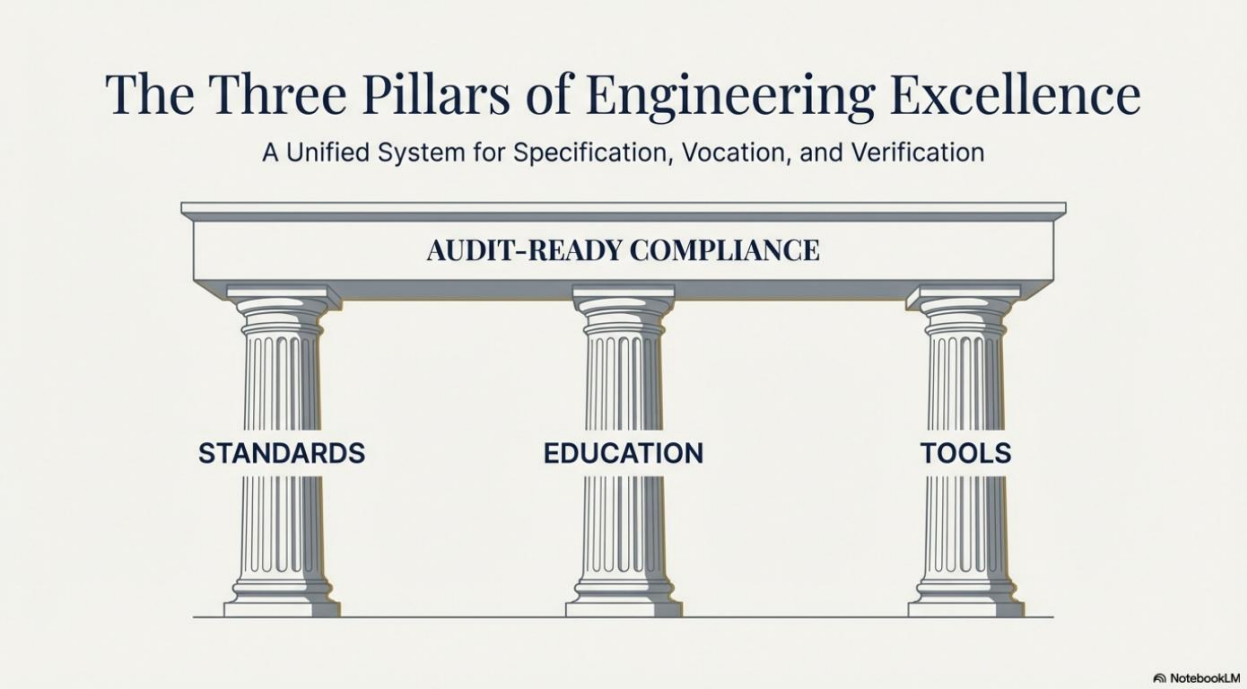
For Electrical Trade Theory, core subjects like DC Theory (30%) receive the highest weighting.



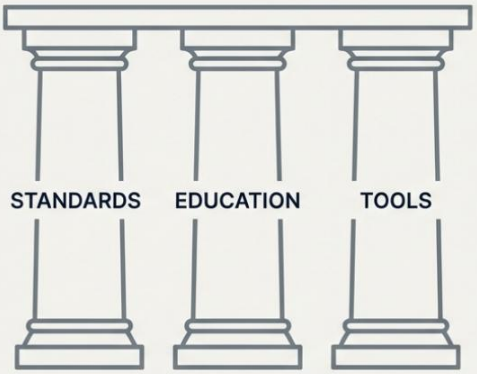
Credentials Require Standardized, Auditable Data.

Official certificates include SAQA ID, NQF Level, and credits for verification.

NotebookLM


The Three Pillars of Engineering Excellence
A Unified System for Specification, Vocation, and Verification
AUDIT-READY COMPLIANCE
STANDARDS
EDUCATION
TOOLS
NotebookLM

An Integrated Ecosystem for Uncompromising Quality



True engineering excellence is not a single achievement, but a self-sustaining system. It rests on three interconnected pillars that create a virtuous cycle of definition, development, and validation.

1. **The Blueprint (Specification):** Rigorous technical standards (MIL-STDs) define exactly what "right" looks like.
2. **The Foundation (Vocation):** Structured educational frameworks (SAQA/NATED) build the human competency required to execute the blueprint.
3. **The Toolkit (Verification):** Applied technology provides the tools to audit, verify, and ensure consistent application of skills against the standards.

NotebookLM

Pillar I: The Blueprint — Defining Excellence with Rigorous Standards

In high-stakes industries like aerospace and defense, ambiguity is the enemy of **reliability. Military Standards** (MIL-STDs) provide an uncompromising, evidence-based language for quality. They are not just documents; they are the codified wisdom of decades of engineering practice, covering everyt-hing from component selection to environmental survivability.

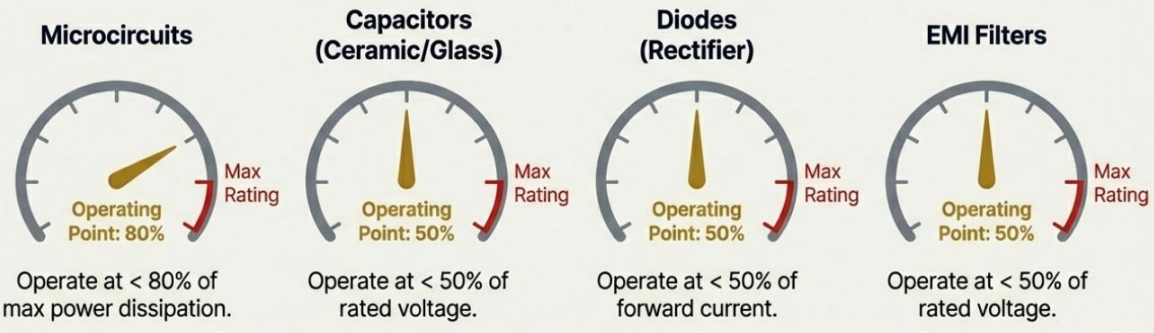
Key Areas Covered by Standards:

MIL-STD-11991B Parts, Materials, and Processes (PM&P) Management	**MIL-STD-810, MIL-STD-202G** Environmental Engineering & Testing
MIL-STD-100G Engineering Drawing Practices	**MIL-STD-461** Electromagnetic Interference

NotebookLM

The Derating Principle: Building Reliability by Operating Below Maximum Stress

A core tenet of MIL-STD-11991B is component derating—intentionally using parts well below their maximum specified ratings. This practice dramatically increases reliability and lifespan by creating a significant safety margin against electrical and thermal stress.



Operate at < 80% of max power dissipation.

Operate at < 50% of rated voltage.

Operate at < 50% of forward current.

Operate at < 50% of rated voltage.

NotebookLM

Verification at the Source: A Culture of Inspection and Testing

Compliance is not assumed; it is proven. MIL-STDs mandate a comprehensive suite of inspections and tests to validate every component and process, from incoming materials to final assembly. The goal is to detect non-conformance, counterfeit parts, and latent defects before they can compromise a system.

Key Inspection & Test Examples from MIL-STD-11991B & MIL-STD-202G

Counterfeit Detection

Marking Permanency tests (mineral spirits, acetone) to detect remarked parts.

Internal Defects

Radiological Inspection (X-ray) to verify die size and leadframe consistency.

Loose Particles

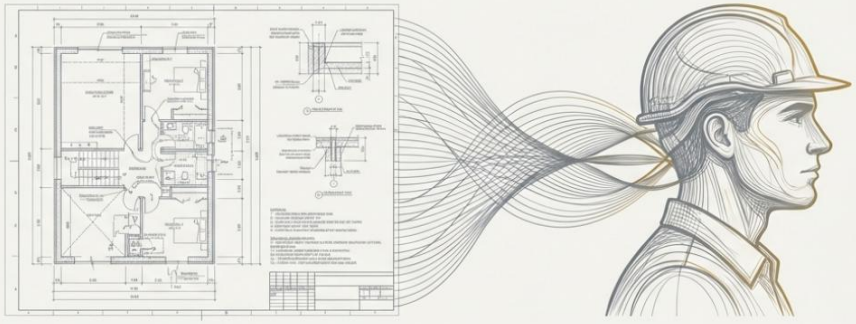
Particle Impact Noise Detection (PIND) to find contaminants in sealed cavity devices.

Environmental Survivability

Thermal Shock (liquid-to-liquid or air-to-air) and Random Vibration tests to ensure components withstand operational stress.

NotebookLM

An Exacting **Blue**print Requires Expert **Architects and Builders**



These standards are comprehensive but not self-enacting. Their successful implementation depends entirely on a workforce with the requisite technical knowledge, practical skills, and commitment to quality.

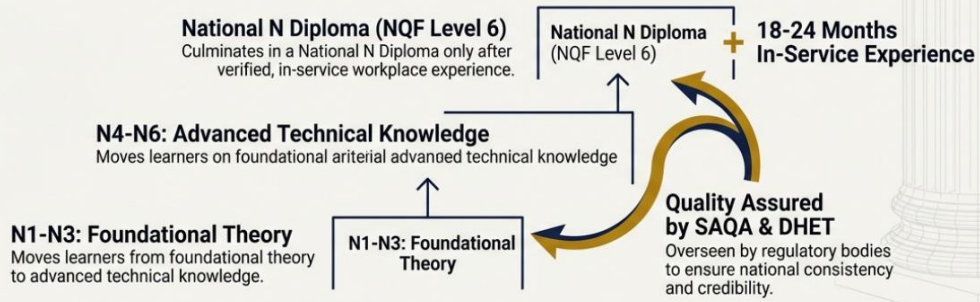
How do we systematically cultivate this deep expertise?

NotebookLM

Pillar II: The Foundation — Forging Competency Through Structured Education

Engineering excellence is built, not born. A robust educational framework is essential for translating complex standards into practical skills. The South African model, governed by SAQA and DHET, provides a powerful case study in vertically integrated technical training.

The NATED (National Accredited Technical Education Diploma) Framework:


National N Diploma (NQF Level 6)
Culminates in a National N Diploma only after verified, in-service workplace experience.
National N Diploma (NQF Level 6)
+
18-24 Months In-Service Experience
N4-N6: Advanced Technical Knowledge
Moves learners on foundational ariterial advanced technical knowledge
N1-N3: Foundational Theory
Moves learners from foundational theory to advanced technical knowledge.
N1-N3: Foundational Theory
Quality Assured by SAQA & DHET
Overseen by regulatory bodies to ensure national consistency and credibility.

NotebookLM

The Practitioner's Passport: A Journey of Accredited Expertise

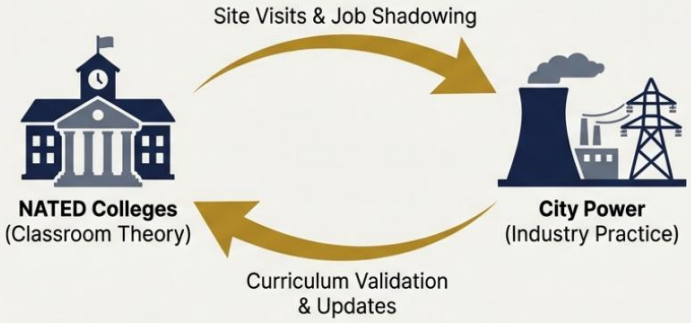
The framework produces professionals with verifiable, multi-faceted qualifications. The career of Tshingombe Tshitadi illustrates this journey, combining formal engineering education with credentials in assessment, moderation, and continuous professional development. This establishes the lived authority required to not only practice but also to teach and validate the skills of others.

NotebookLM

Bridging the Gap: Where Curriculum Meets the Real World

An effective educational system constantly validates its curriculum against industry practice. The NATED engineering colleges' visit to City Power serves as a model for this alignment. Through job shadowing and site inspections, students and lecturers ensure that classroom theory—like SANS 10142-1 wiring standards—is directly applicable to the challenges of a municipal utility.

This process enriches the student's Portfolio of Evidence (PoE) and informs curriculum updates, ensuring graduates are not just certified, but truly job-ready.



Key Activities:

- Job Shadowing in Metering & Test Branches
- Curriculum Validation Against Live Site Conditions
- Submission of PoE for National Trade Portfolio Evaluation

NotebookLM

Competency is Proven Through Consistent, Verifiable Practice

Graduating a qualified engineer is a critical milestone, but it is not the end of the story. For an organization to achieve true compliance, it must ensure that these hard-won skills are applied correctly and consistently across all projects, every single day.

The next challenge: **How do we scale and verify expert performance?**

NotebookLM

Pillar III: The Toolkit — Embedding Excellence with Applied Auditing Technology

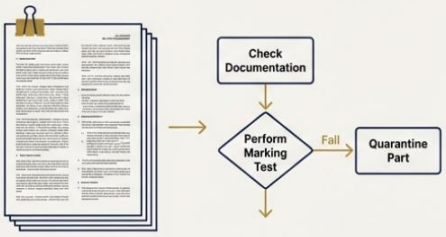
Human expertise is invaluable, but human processes are fallible. To ensure unwavering compliance, we must augment human skill with technology. The third pillar involves creating practical, automated tools that translate the complexity of MIL-STDs into simple, error-proof workflows for auditing and verification. This moves quality assurance from a manual, spot-check process to a systematic, embedded function.

NotebookLM

From Dense Standards to Dynamic Checklists

We can transform static compliance documents into interactive, intelligent auditing tools. By mapping the decision logic of a standard into a logigram or algorigram, we can then use simple but powerful code (like Excel VBA) to automate the process.

1. Map the Logic



A process like "Counterfeit Part Detection" from MIL-STD-11991B is mapped into a decision flowchart (logigram).

2. Automate the Workflow

A VBA macro parses the standard's text and generates an interactive checklist based on the mapped logic.

3. Execute the Audit

An inspector uses the tool, which guides them through the process, records findings, and creates an audit-ready trail automatically.

NotebookLM

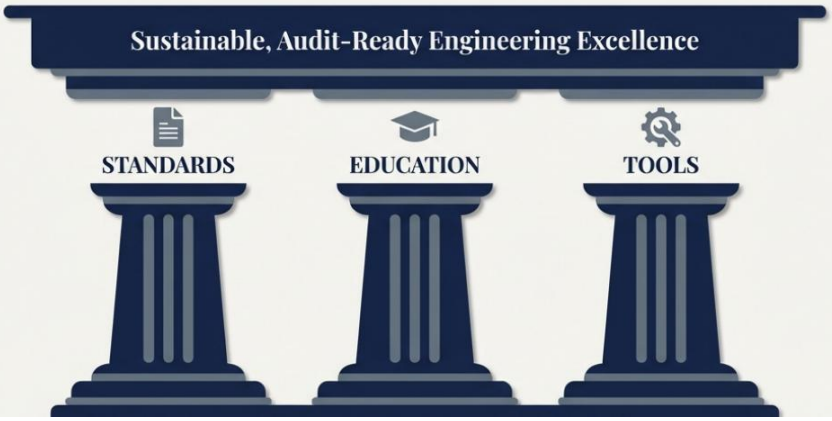
The Ecosystem of Excellence: A Virtuous Cycle

These three pillars are not independent silos; they form a powerful, self-reinforcing ecosystem. Each element informs and strengthens the others, creating a continuous loop of improvement and compliance.

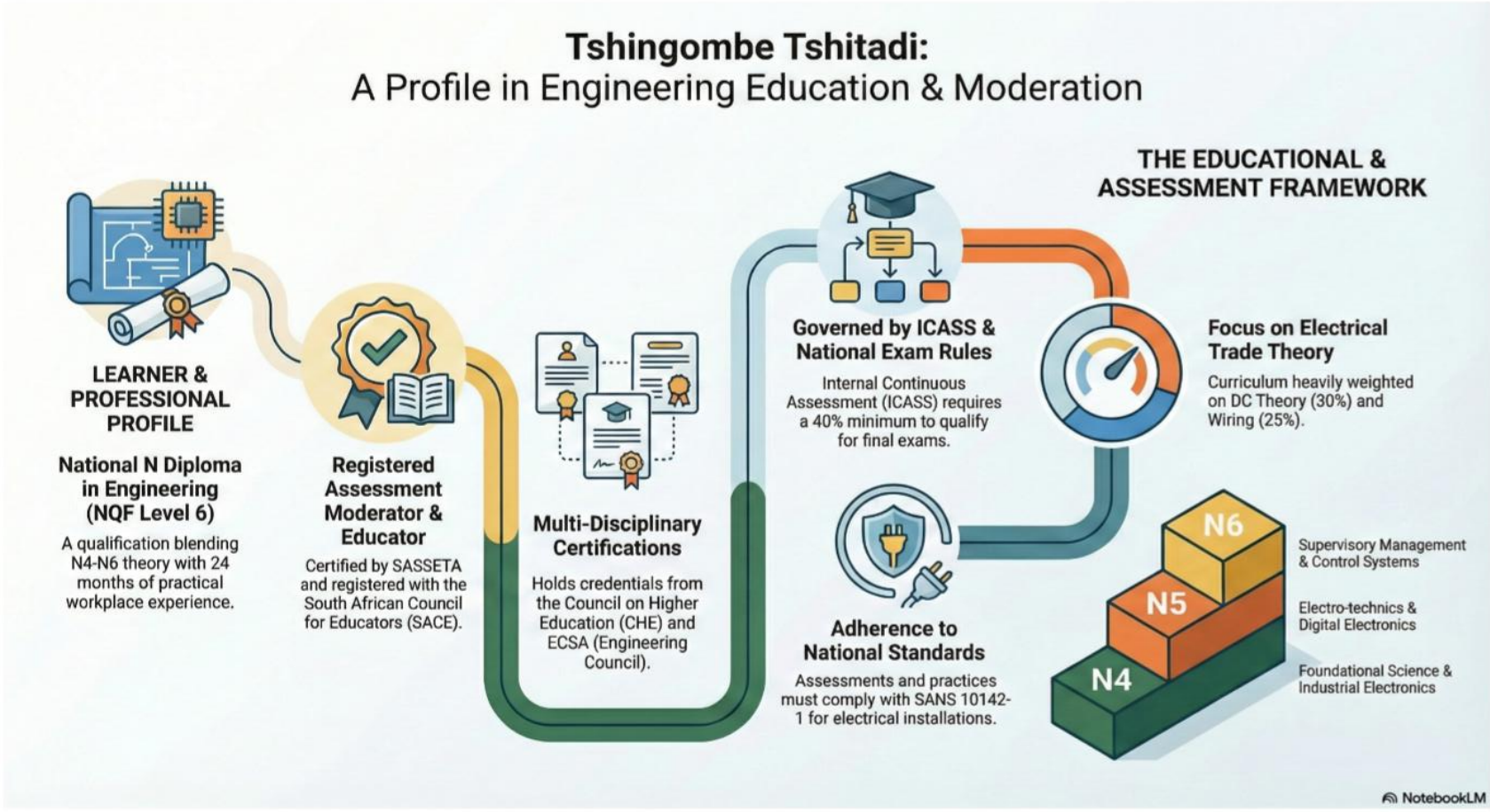
NotebookLM

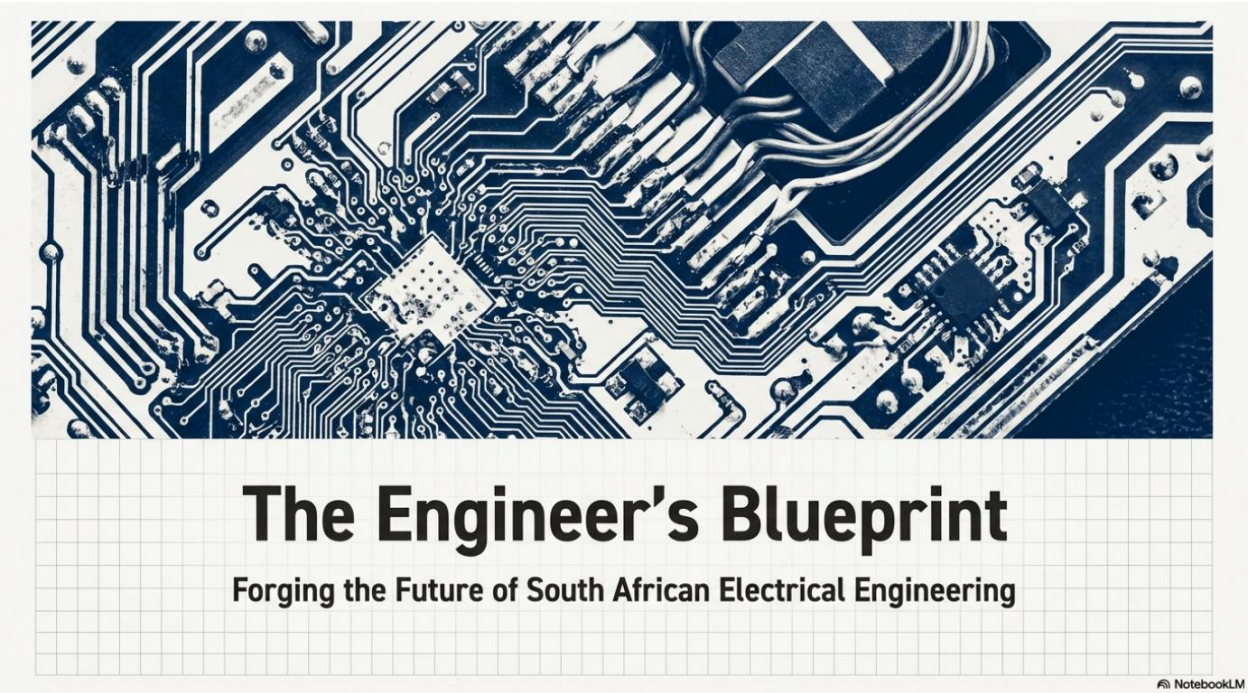
Building the Audit-Ready Organization

The future of high-reliability engineering belongs to organizations that master this integrated system. By strategically aligning rigorous **standards**, targeted **education**, and intelligent **tools**, we move beyond simply managing compliance to building a culture of intsic excellence. This is not just a methodology; it is a blueprint for creating a resilient, verifiable, and world-class engineering practice.



NotebookLM

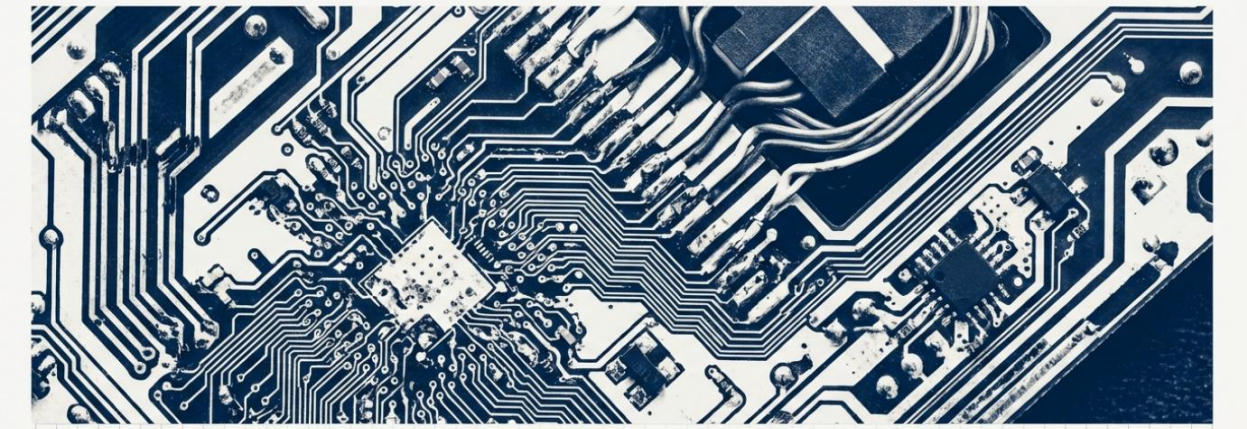

Tshingombe Tshitadi:
A Profile in Engineering Education & Moderation
LEARNER & PROFESSIONAL PROFILE
National N Diploma in Engineering (NQF Level 6)
A qualification blending N4-N6 theory with 24 months of practical workplace experience.
Registered Assessment Moderator & Educator
Certified by SASSETA and registered with the South African Council for Educators (SACE).
Multi-Disciplinary Certifications
Holds credentials from the Council on Higher Education (CHE) and ECSA (Engineering Council).
THE EDUCATIONAL & ASSESSMENT FRAMEWORK
Governed by ICASS & National Exam Rules
Internal Continuous Assessment (ICASS) requires a 40% minimum to qualify for final exams.
Focus on Electrical Trade Theory
Curriculum heavily weighted on DC Theory (30%) and Wiring (25%).
Adherence to National Standards
Assessments and practices must comply with SANS 10142-1 for electrical installations.
N6
N5
N4
Supervisory Management & Control Systems
Electro-technics & Digital Electronics
Foundational Science & Industrial Electronics
NotebookLM



The Engineer's Blueprint

Forging the Future of South African Electrical Engineering

NotebookLM



The Engineer's Blueprint

Forging the Future of South African Electrical Engineering

NotebookLM

South Africa's Industrial Future Demands a New Caliber of Engineer

The 4th Industrial Revolution (4IR), urbanization, and the energy transition are placing unprecedented demands on our infrastructure.

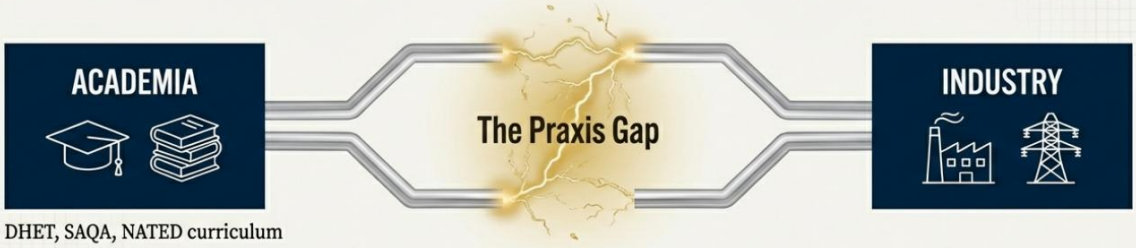
Key entities like **Eskom** and **City Power** are at the forefront of this challenge, facing a critical need for talent to manage and innovate within complex systems.

The current talent pipeline is struggling to keep pace, creating a significant risk to national competitiveness and service delivery.

The innovation define city power municipality government institutes city jhb delivery matter supply public and private urbanization energy electrical.

NotebookLM

A Systems Integration Failure: The Gap Between Education and Industry



DHET, SAQA, NATED curriculum

Curriculum Mismatch

A significant gap exists between NATED subjects (N1-N6) and the real-world application of electrotechnology, power systems, and modern automation.

Unstructured Practical Experience

Students face "irregularity" in the system. Site visits to high-voltage environments are often unstructured and potentially unsafe, lacking defined learning outcomes. *("...student was not in site was dangerous place for health student working in higher voltage...")*

Fragmented Assessment

A divide between theoretical "dhet nated class question theory test" and practical "test trade" competency evaluation creates confusion and devalues qualifications.

NotebookLM

1 Pillar 1: A Dynamic, Demand-Led Curriculum

TRADITIONAL NATED SUBJECTS	MODERN 4IR APPLICATIONS
Mathematics	Robotics Kinematics & Control
Engineering Science	Smart Metering Systems
Industrial Electronics	PLC Programming
Electrotechnics	Network Transmission Analysis

Integrate First Principles with 4IR Applications

- The curriculum must ground students in fundamental engineering science, mathematics, and electrotechnology while explicitly connecting these principles to modern challenges like smart grids, robotics, and automation.

Align NQF Levels with Industry Milestones

- Map NATED subject outcomes (N1-N6) to specific, industry-recognized competencies, from basic panel wiring (N4/N5) to complex system logic.

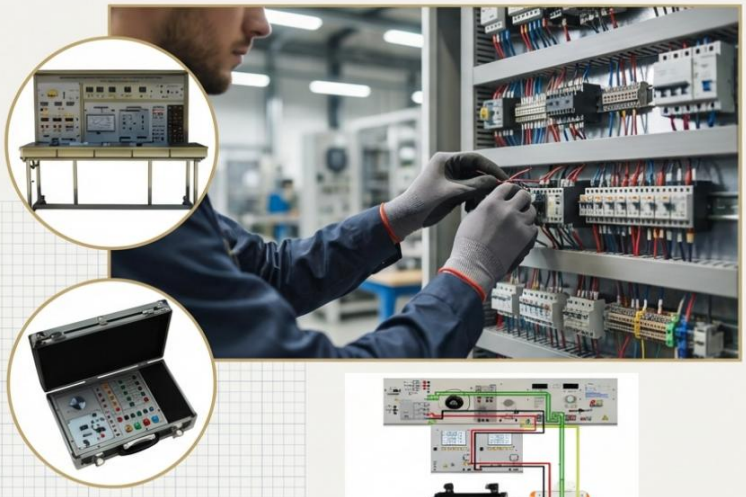
Introduce Modern Tooling Early

- Incorporate education on contemporary systems like PLC programming, SCADA, and digital twin simulation, reflecting the tools used by City Power and Eskom.

Evidence: Required: labour training quality body assessment, driven machinery regularite safety 1999, acting in term code practice.

NotebookLM

2 Pillar 2: Structured Industry Praxis



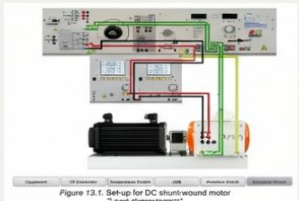


Figure 13.1. Set-up for DC shunt-wound motor

Key Actions:

- **"Formalized Partnerships"**
  Establish Memorandums of Agreement between TVET colleges (e.g., St Peace College) and industry leaders (e.g., City Power) for structured apprenticeship programs.
- **"Defined Learning Modules"**
  Replace undefined "day visits" with structured modules focused on specific, measurable skills:
  - Panel wiring and DB box installation
  - Fault-finding and protective device sequencing
  - Single-phase metering installation and testing
  - Adherence to SANS 10142 safety protocols
- **"Mentorship and Supervision"**
  Assign experienced industry practitioners to mentor and supervise trainees, ensuring safe practices and knowledge transfer.

NotebookLM

3 Pillar 3: Competency-Based Unified Assessment

Integrated Assessment Tools: Develop a unified 'Portfolio of Evidence (Poe)' that includes both NATED exam results and a logbook of verified practical competencies completed on-site.

Co-Developed Assessment Criteria: Industry partners and academic institutions will jointly develop the assessment rubrics, ensuring questions and tasks reflect real-world challenges.

Co-Signed Certification: Upon successful completion, the student receives a National Diploma that is co-signed by the DHET-accredited college and the industry partner (e.g., "City Power Certified"), signaling immediate workplace readiness.

NotebookLM

A Multi-Domain Expert

A presentation in two parts, showcasing a decade of experience in designing and implementing complex electrical and software systems while concurrently navigating the intricate procedural demands of the South African legal system.

1 **Part I: Mastering Engineered Systems**
A portfolio of core technical projects.

2 **Part II: Navigating Human Systems**
A case study in systematic problem-solving and resilience.

3 **Synthesis**
Core competencies and forward outlook.

NotebookLM

Grounded in First Principles

The framework is built on a deep and rigorous understanding of the fundamental laws of electrical and mechanical engineering. Any practical application must be derived from a mastery of the core principles.

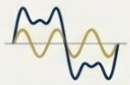
Synchronous Motor Equations

$$V = E_b + I_a(R_a + JX_s)$$

Transformer Voltage Regulation

$$\%\,\text{reg (down)} = \frac{(V_{(\text{no–load})} - V_{(\text{full load})})}{V_{(\text{no–load})}} \times 100\%$$

Fourier Transform Notation



transformer Fourier TD ✓ (x, y)

Calculus & Resonance

$$\frac{dy}{dx} = \frac{4x + 3}{2x + 2}$$

$$f = \frac{1}{2\pi\sqrt{\frac{1}{RC} - \frac{R^2}{L^2}}}$$

Ideal Gas Law (Thermodynamics)

$$\frac{P_1V_1}{T_1} = \frac{P_2V_2}{T_2}$$

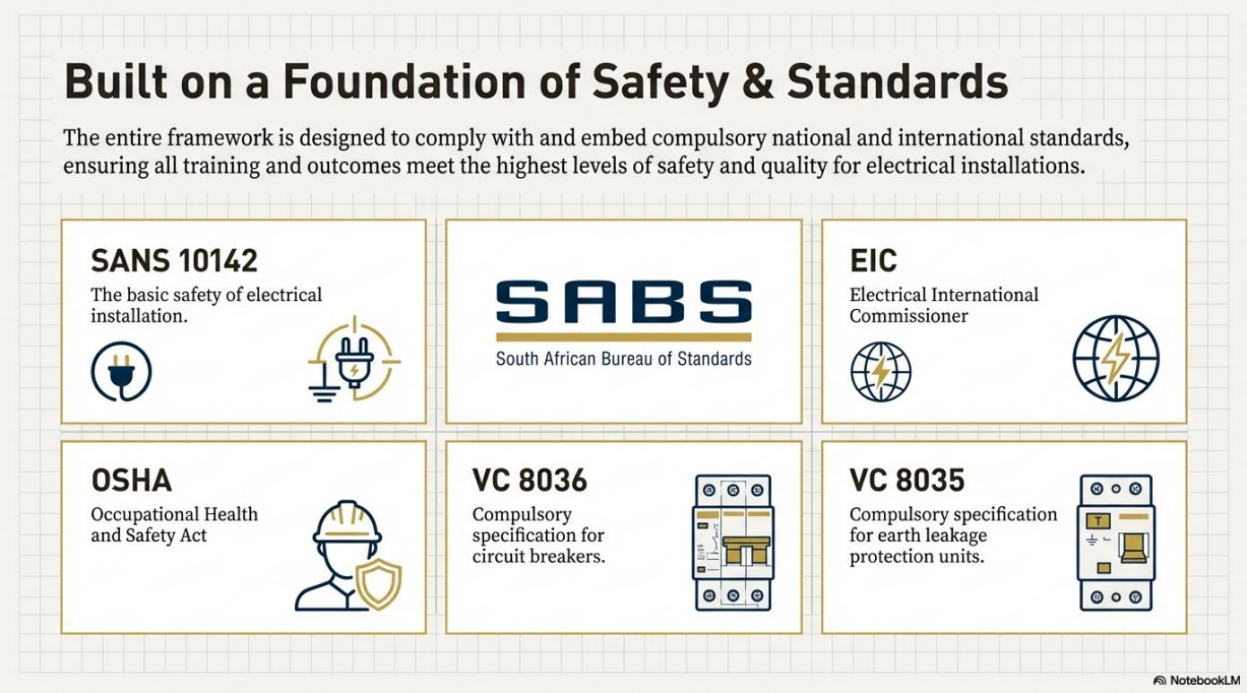
NotebookLM

Engineered for Implementation

This framework is supported by a detailed implementation plan, including stakeholder analysis, project objectives, budget considerations, and monitoring and evaluation mechanisms, as outlined in the proposal framework for the Department of Higher Education and Training (DHET).

Main Activities	Outputs/ M&E	Timeframe	Responsible Person	Detailed Costs
Engineering electrical assessment curriculum policy	2	8h	Tshingombe	50,000
Electrical portfolio engineering	12	8h	Tshingombe Tshitadi	50,000

NotebookLM


Built on a Foundation of Safety & Standards
The entire framework is designed to comply with and embed compulsory national and international standards, ensuring all training and outcomes meet the highest levels of safety and quality for electrical installations.
SANS 10142
The basic safety of electrical installation.
SABS
South African Bureau of Standards
EIC
Electrical International Commissioner
OSHA
Occupational Health and Safety Act
VC 8036
Compulsory specification for circuit breakers.
VC 8035
Compulsory specification for earth leakage protection units.
NotebookLM

The Architect of the Blueprint: Fiston Tshingombe

This framework is the culmination of a journey spanning the full spectrum of the engineering ecosystem.

Academic Progression

Successfully navigated the N-Diploma (N1-N6) curriculum, gaining first-hand experience of its strengths and weaknesses.

Professional Practice

Engaged in high-level 'Business Engineering' consulting, as evidenced by professional invoices (e.g., ZAR 100,920.00).

Systemic Research

Developed and documented this comprehensive solution as part of a formal research plan for the Eskom Expo for Young Scientists, demonstrating a commitment to systemic improvement.

NotebookLM

An Invitation to Collaborate

The blueprint is ready. We are seeking partners to build the future of South African engineering. We propose the following next steps:

1. Stakeholder Workshop

Convene a workshop with key stakeholders—**DHET, City Power, Eskom, SAQA, QCTO, and TVET College representatives**—to refine the framework and establish a working group.

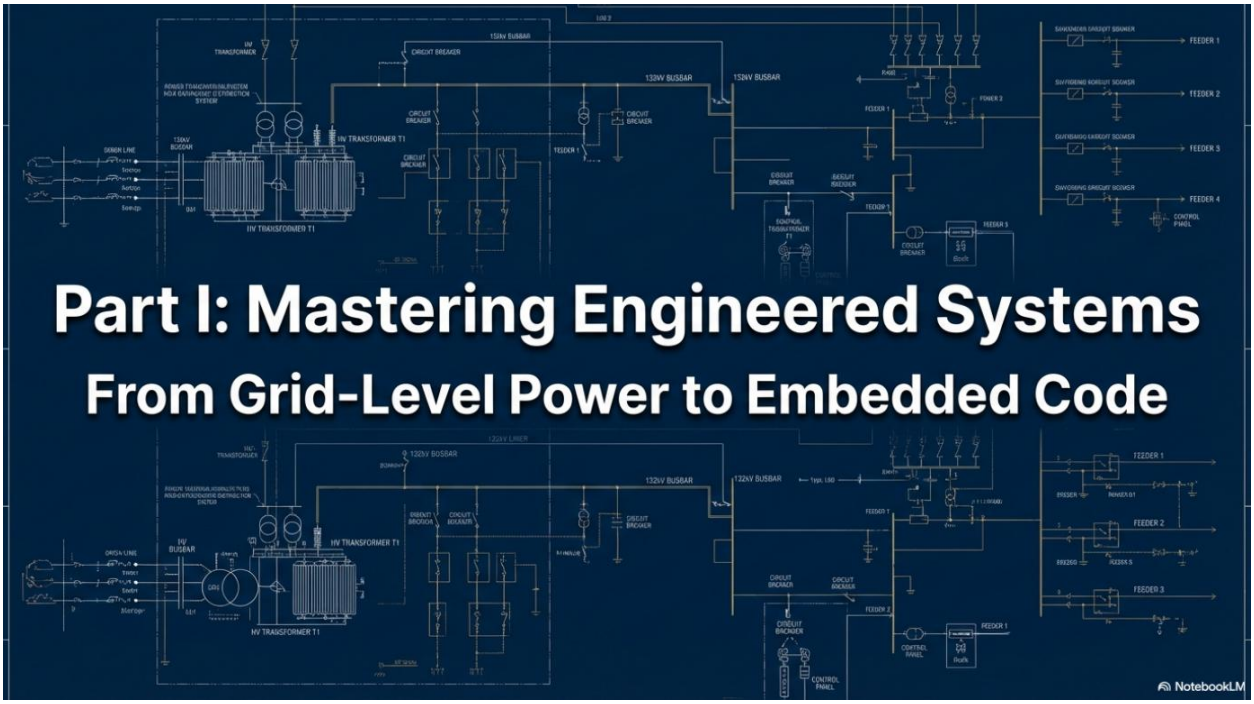
2. Pilot Program Launch

Partner with an industry leader and a TVET college to launch a pilot program based on one core module (e.g., 'Metering and Smart Grid Integration') to validate the model and measure outcomes.

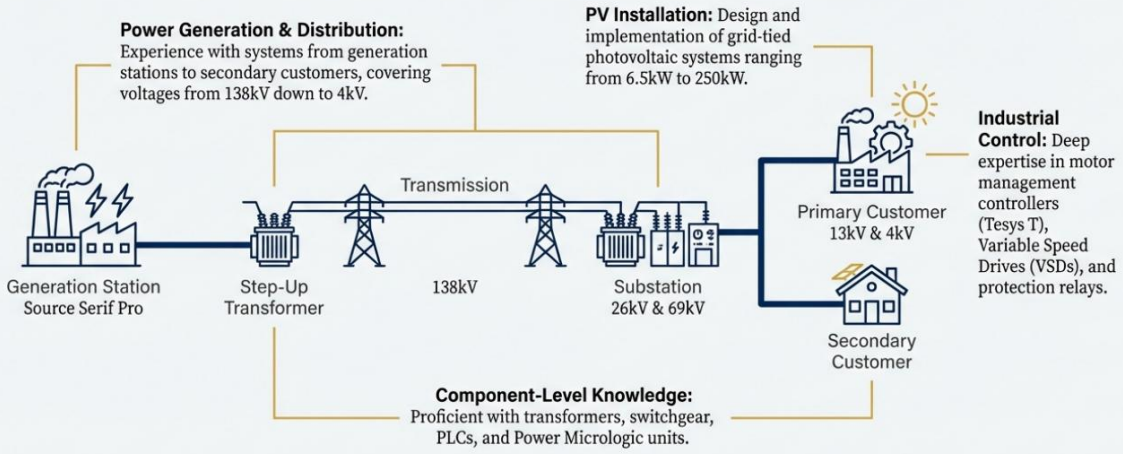
Fiston Tshingombe
tshingombekb@gmail.com
[Placeholder for Professional Contact Number]

NotebookLM

A Multi-Domain Expert
A presentation in two parts, showcasing a decade of experience in designing and implementing complex electrical and software systems while concurrently navigating the intricate procedural demands of the South African legal system.
1
Part I: Mastering Engineered Systems
A portfolio of core technical projects.
2
Part II: Navigating Human Systems
A case study in systematic problem-solving and resilience.
3
Synthesis
Core competencies and forward outlook.
NotebookLM


Part I: Mastering Engineered Systems
From Grid-Level Power to Embedded Code
NotebookLM

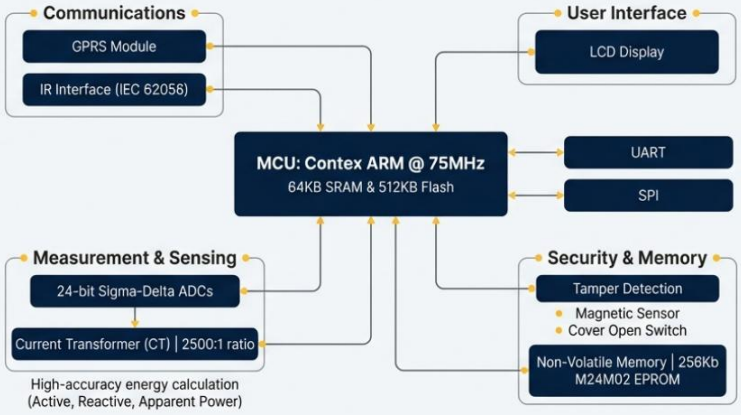
Architecting the Flow of Energy


Power Generation & Distribution: Experience with systems from generation stations to secondary customers, covering voltages from 138kV down to 4kV.
PV Installation: Design and implementation of grid-tied photovoltaic systems ranging from 6.5kW to 250kW.
Industrial Control: Deep expertise in motor management controllers (Tesys T), Variable Speed Drives (VSDs), and protection relays.
Transmission
Generation Station
Source Serif Pro
Step-Up Transformer
138kV
Substation
26kV & 69kV
Primary Customer
13kV & 4kV
Secondary Customer
Component-Level Knowledge: Proficient with transformers, switchgear, PLCs, and Power Micrologic units.

NotebookLM

Project Showcase: Three-Phase Smart Meter Architecture

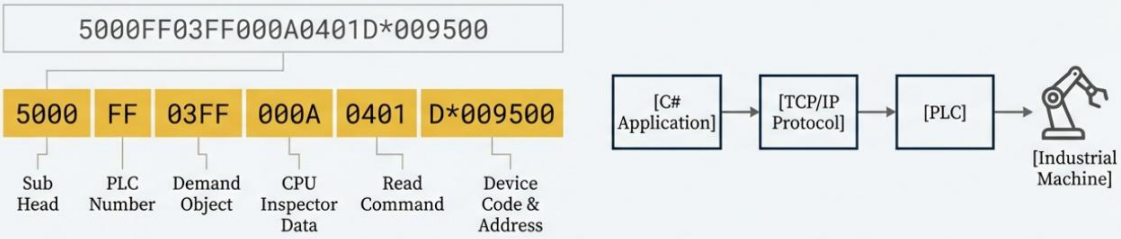
Detailed analysis and component breakdown of a smart meter based on the MKM35512 series MCU, designed for real-time, low-power grid monitoring and secure data transmission.



NotebookLM

Bridging the Physical and Digital Worlds with PLCs

Expertise in programming and communication with Programmable Logic Controllers (PLCs) for industrial automation.



Key Skill: Protocol Engineering

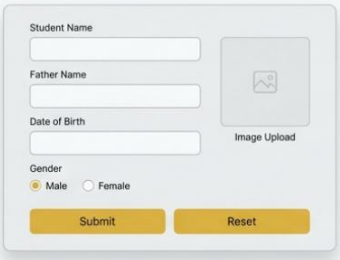
Demonstrated ability to construct and parse complex command strings for PLC data exchange over TCP/IP. The example showcases a C# implementation for reading/writing to a specific device address.

NotebookLM

Creating Solutions with Code

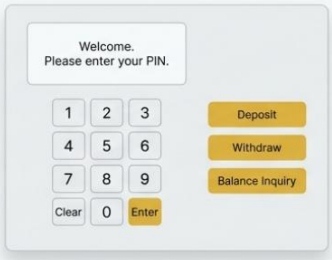
A portfolio of applications developed using Visual Basic (VBA/VB.NET) and C# to solve specific business and engineering problems.

Automated Student Registration



An Excel/VBA UserForm with database integration, input validation (`ValidEntry` function), image handling (`LoadPicture`), and data persistence.

Visual Basic ATM System

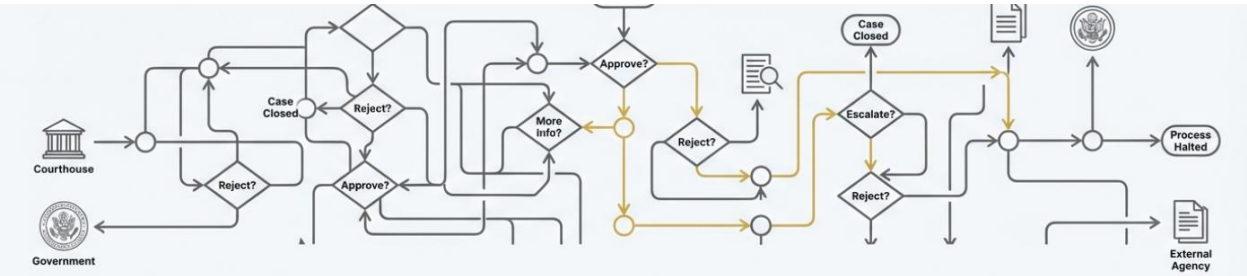


A functional simulation of an ATM interface in VB.NET with logic for PIN verification (`If pin box.text = "9343""), deposits, and transaction handling.

Engineering Calculator

A custom scientific calculator built in VB with functions for standard and complex operations (`Select case [operator]`).

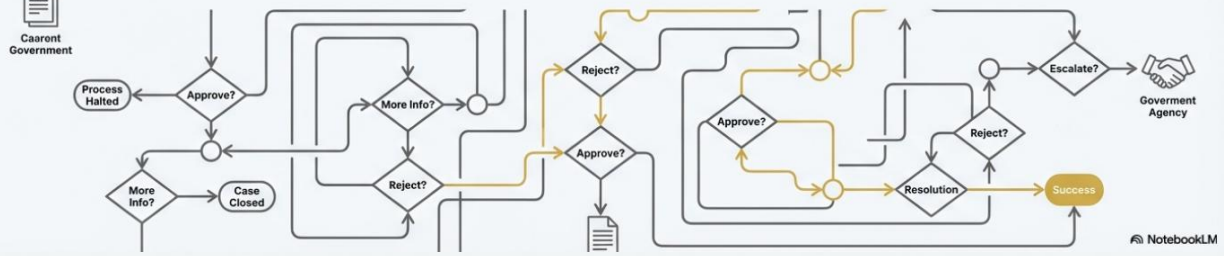
NotebookLM



Part II: Navigating Human Systems

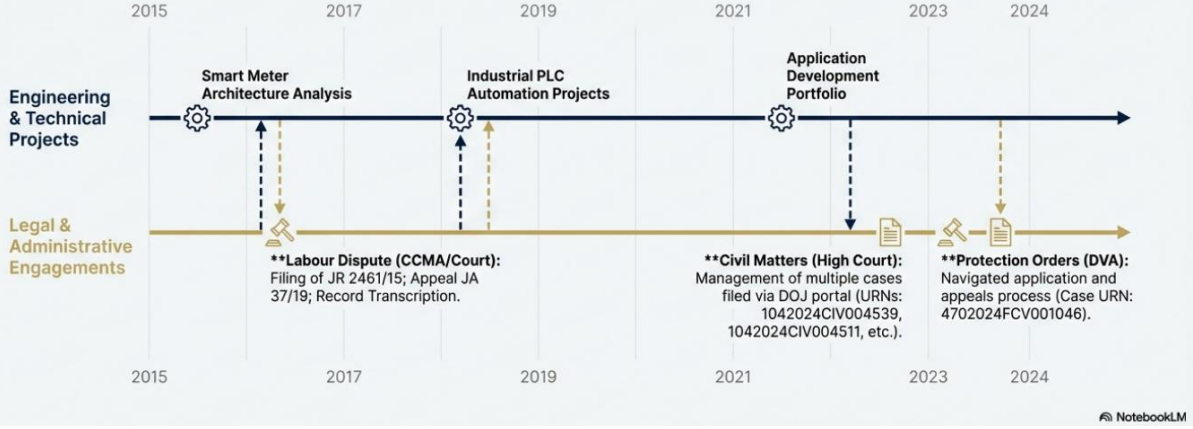
Handaisk

A Case Study in Resilience and Procedural Mastery



A Systematic Navigation of the South African Justice System

Concurrently with full-time technical work, managed multiple complex legal cases requiring deep procedural understanding and direct engagement with various judicial and administrative bodies.


2015
2017
2019
2021
2023
2024
Engineering & Technical Projects
Smart Meter Architecture Analysis
Industrial PLC Automation Projects
Application Development Portfolio
Legal & Administrative Engagements
**Labour Dispute (CCMA/Court): Filing of JR 2461/15; Appeal JA 37/19; Record Transcription.
**Civil Matters (High Court): Management of multiple cases filed via DOJ portal (URNs: 1042024CIV004539, 1042024CIV004511, etc.).
**Protection Orders (DVA): Navigated application and appeals process (Case URN: 4702024FCV001046).
NotebookLM

Deconstructing the Legal Process: An Engineer's Methodology

Applied a systematic, engineering-based methodology to legal casework, treating procedural law as a complex system with inputs, processes, and required outputs.

Evidence of Methodical Approach

- **Meticulous Documentation:** Created and maintained detailed indexes of all pleadings, evidence, affidavits, and correspondence for court appeals (e.g., 'Content files JA 37/19').
- **Procedural Adherence:** Correctly filed numerous and varied forms for different legal bodies, including petitions, notices of motion, referrals, affidavits, and proof of service.
- **Multi-Agency Interaction:** Coordinated and managed correspondence with the Department of Justice (DOJ), CCMA, SAQA, DHE, South African Police Service (SAPS), and private sector entities.

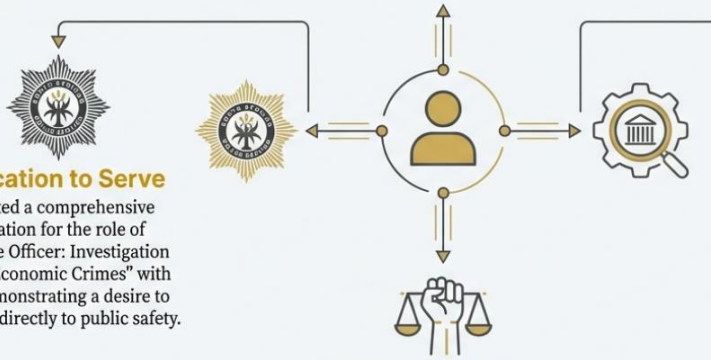
Index of Pleadings: Case JA 37/19

Description of document	Page no
Notice of motion: petition for leave to appeal :	1-36
Affidavit in support of application register :	80-82
Notice of record order transcript :	102-104
Notice proof of service contractor close :	138-200
Notice affidavit record answer investigation :	416-458

NotebookLM

Applying Systems Thinking to Societal Challenges

Interest and engagement extends beyond personal casework to the systematic improvement of public safety and justice systems.



Application to Serve

Submitted a comprehensive application for the role of "Detective Officer: Investigation Team B: Economic Crimes" with SAPS, demonstrating a desire to contribute directly to public safety.

Academic Research

Explored academic work on technology in law enforcement, such as the paper "Web-Based Crime Management System for Samara City Main Police Station."

Community Activism

Engaged with social justice organizations by applying to "ACTIVISM ROW," selecting focus areas including "The right to a fair trial and access to justice" and "Racial justice and anti-racism."

NotebookLM

Core Competencies: A Unified Skillset

Technical Acumen

- Power Systems Analysis & Design
- Embedded Systems & IoT (Smart Metering) Metering)
- Industrial Automation & PLC Comms
- Application Development (VB.NET, C#, VBA)
- System & Protocol Engineering

Demonstrated Character

- **Exceptional Resilience:** Sustained high-level technical work through multi-year legal challenges.
- **Systematic Problem-Solving:** Applied engineering discipline to deconstruct and navigate complex legal procedures.
- **High Agency & Self-Advocacy:** Proactively managed all aspects of complex personal and professional challenges.
- **Unwavering Tenacity:** Pursued objectives methodically through multiple levels of appeal and bureaucracy.

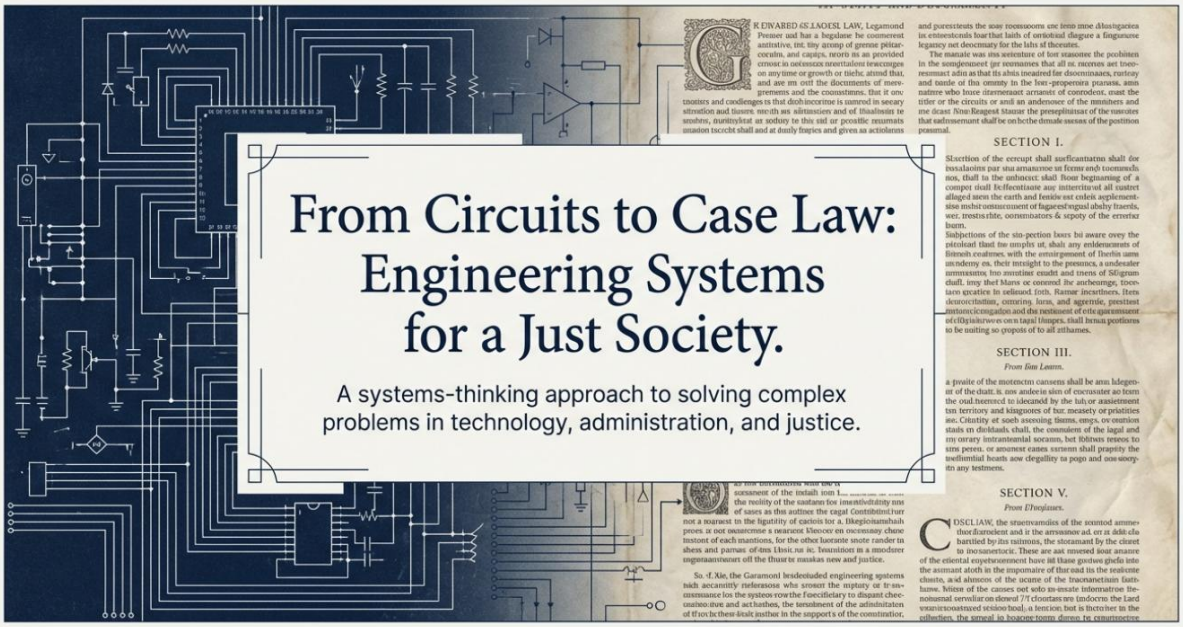
NotebookLM

Ready for the Next Challenge

"The ability to design a circuit, write a program, or navigate a courtroom stems from the same core skill: the patient, logical deconstruction of a complex system. I am equipped and eager to apply my unique blend of technical and practical experience to solve the next generation of challenges."

Name: Tshingombe T. Fiston
Email: TSHINGOMBE@GMAIL.COM
linkedin.com/in/your-profile

NotebookLM


From Circuits to Case Law: Engineering Systems for a Just Society.
A systems-thinking approach to solving complex problems in technology, administration, and justice.
SECTION I.
SECTION III.
SECTION V.

NotebookLM

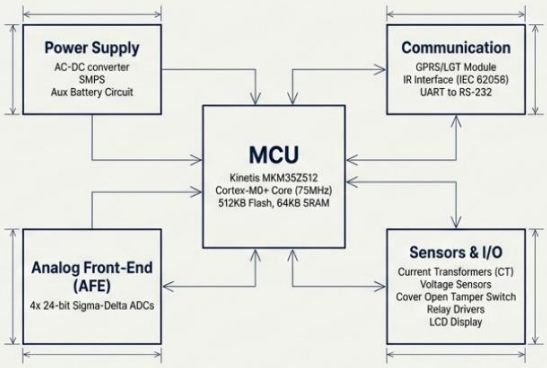
Mastering Physical Systems: The Three-Phase Smart Power Meter

A case study in component-level hardware design for energy management. This project demonstrates end-to-end development, from fundamental theory to a functional, multi-component device.

Core Theory

Active Energy:	$WH = \int u(t)i(t)dt$
Reactive Energy:	$VARh = \int u(t-90°)i(t)dt$
Active Power:	$P = \frac{1}{T}\int u(t)i(t)dt$
Apparent Power:	$S = I_{RMS} \times U_{RMS}$

Hardware Architecture Diagram



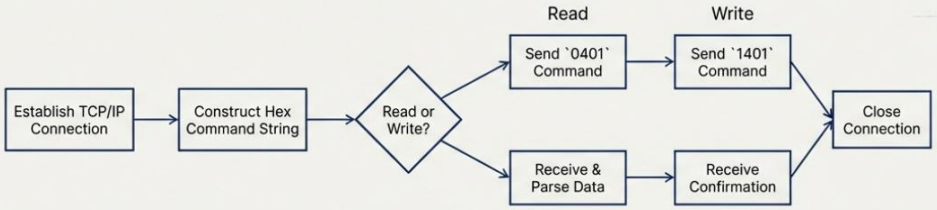
Technical Specifications

- **Nominal Voltage**: 240 VAC +20%
- **Current Range**: 0-60A (10A nominal)
- **Accuracy Class**: 0.5 (0.5%)
- **Remote Communication**: GPRS module with 1x SIM card slot.

NotebookLM

Interfacing with Industrial Systems: PLC Data Communication

Developing and implementing communication protocols to read from and write to industrial PLCs. This is critical for automation, monitoring, and control in manufacturing and infrastructure environments.



C# Code Snippet: PLC Read Command

```
// C# code to construct PLC read command string
string cmd = "";
cmd = cmd + "5000";    // Sub head
cmd = cmd + "00";      // Network number
cmd = cmd + "FF";      // PLC number
cmd = cmd + "03FF";    // Demand object (Module + I/O number)
cmd = cmd + "001C";    // Length of demand data
cmd = cmd + "0401";    // Read Command
cmd = cmd + "D*";      // Device code
cmd = cmd + "009500"; // Address
```

C# Code Snippet: PLC Write Command

```
// C# code to construct PLC write command string
string cmd = "";
cmd = cmd + "FF";      // PLC number
cmd = cmd + "1401";    // Write command
cmd = cmd + "0009500"; // Address base
cmd = cmd + "0002";    // Base address
```

****Key Functionality****

- Establishing IP-based connection to PLC.
- Constructing hexadecimal command strings for specific operations.
- Reading data from device memory locations (e.g., D*009500).
- Writing data to control system behavior.

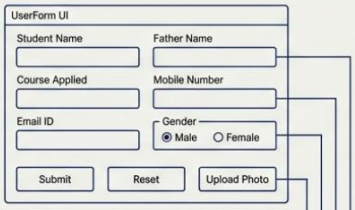
NotebookLM

Building Digital Systems for Human Interaction

Applying software engineering principles to create efficient and user-friendly administrative and financial systems. These projects focus on automating data collection and simulating complex transaction processes.

Case Study 1: Automated Student Registration Form

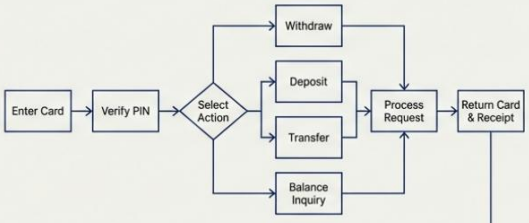
Technology: Excel VBA



- UserForm for data entry.
- Data validation for required fields.
- Image upload functionality.
- Data submission to a backend Excel database.
- Reset and Submit/Update functionality.

Case Study 2: ATM System Simulation

Technology: VB.NET with MS Access Database



- User login with PIN code verification.
- Core banking functions: Deposit, Withdraw, Transfer.
- Account registration and management.
- Backend database for transaction records.

NotebookLM

IN THE HIGH COURT OF SOUTH AFRICA
OF

The Department of Justice and Constitutional Development

The Department of Justice and Constitutional Development
Commission for Conciliation, Mediation and Arbitration (CCMA)
REPUBLIC OF SOUTH AFRICA

COURT ORDER

Deconstructing a Different System: Navigating South African Case Law.

Direct, first-hand experience analyzing and navigating the South African legal and administrative systems. journey involved multiple government bodies and courts, revealing systemic processes, protocols, and points of

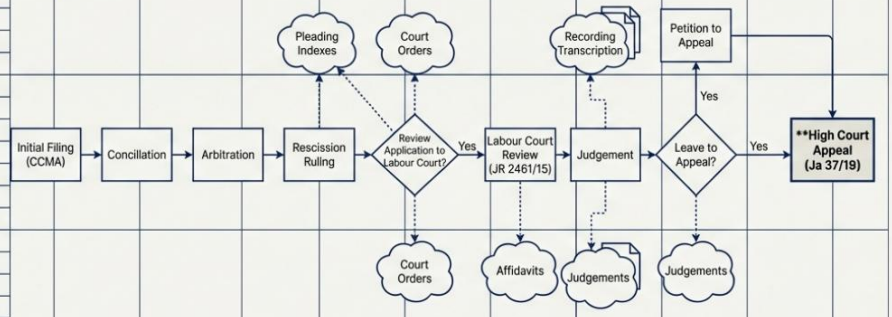
Key Engagements & Case Numbers

- High Court of South Africa: Appeal Case Number Ja 37/19
- Labour Court: Case Number JR 2461/15
- Commission for Conciliation, Mediation and Arbitration (CCMA): Disputes involving Nogada SA, Elizabeth Lerumu
- Department of Justice and Constitutional Development (DOJ&CD): Online civil case filings (1042024CIV004539, 112024CIV000013) and Protection Order applications (URN 4702024FCV001046)

NotebookLM

A Process Analysis of the Justice System

Mapping the multi-year trajectory of legal disputes reveals a complex system with significant inefficiencies. The approach was not one of passive experience, but of active analysis, documenting each step, requirement, and breakdown in the process.



Identified System Failures

- Conflict in civil procedure between system non resolution system agreement.
- School irregularity and back log saqa dhet.
- Transcript no agreement in work skill development.
- Ccma labour didn't grant me award ruling rescission.
- Issues with enforcement and compliance by bodies like PSIRA and bargaining councils.

NotebookLM

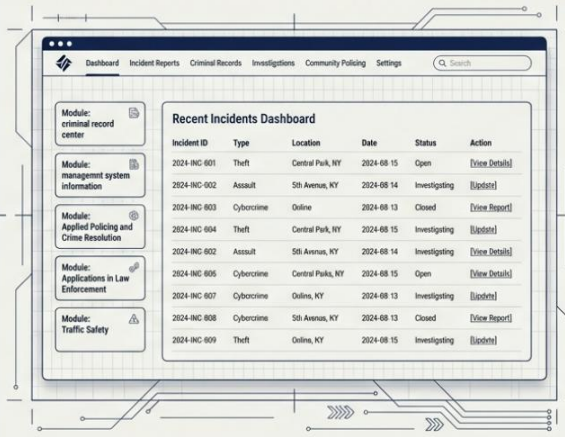
Engineering a Principled Solution: A Web-Based Crime Management System

Problem Statement

- Crime is a human experience that must be controlled; police stations play a significant role.
- Current processes are manual and paper-based, leading to inefficiencies in storing, retrieving, and managing crime activities.
- There is a lack of an automated system for citizen communication and crime reporting.

Proposed Solution

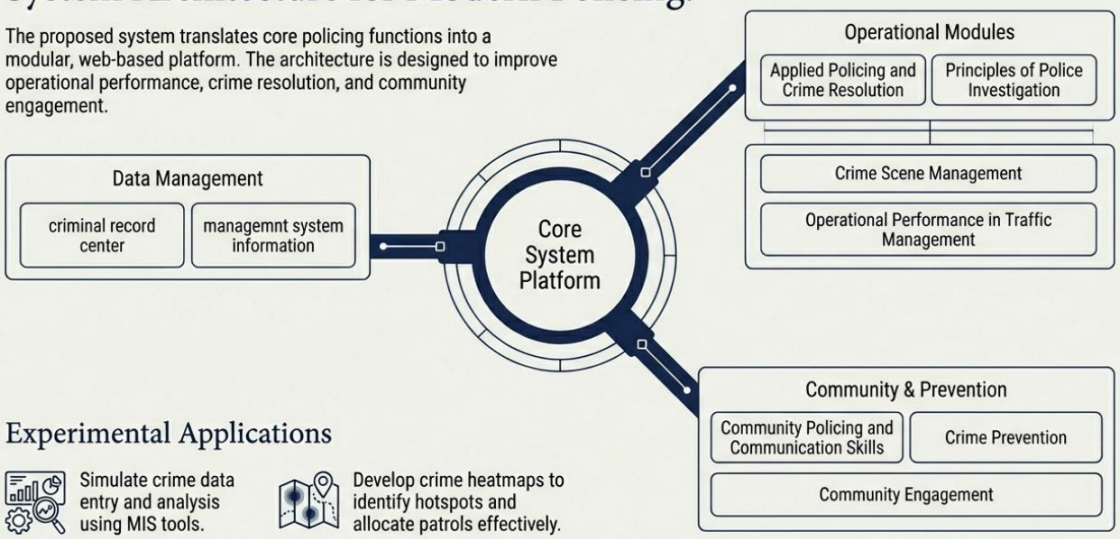
- A web-based application designed to allow any citizen to report crimes online.
- Facilitates online communication between the public and the police.
- Provides a computerized system for the management of crime records.


Dashboard
Incident Reports
Criminal Records
Investigations
Community Policing
Settings
Search
Module: criminal record center
Module: managemnt system information
Module: Applied Policing and Crime Resolution
Module: Applications in Law Enforcement
Module: Traffic Safety
Recent Incidents Dashboard
Incident ID
Type
Location
Date
Status
Action
2024-INC-601 Theft Central Park, NY 2024-08-15 Open [View Details]
2024-INC-602 Assault 5th Avenue, NY 2024-08-14 Investigating [Update]
2024-INC-603 Cybercrime Online 2024-08-13 Closed [View Report]
2024-INC-604 Theft Central Park, NY 2024-08-15 Investigating [Update]
2024-INC-602 Assault 5th Avenue, NY 2024-08-14 Investigating [View Details]
2024-INC-605 Cybercrime Central Parks, NY 2024-08-15 Open [View Details]
2024-INC-607 Cybercrime Online, KY 2024-08-13 Investigating [Update]
2024-INC-608 Cybercrime 5th Avenue, KY 2024-08-13 Closed [View Report]
2024-INC-609 Theft Online, KY 2024-08-15 Investigating [Update]

© NotebookLM

System Architecture for Modern Policing.

The proposed system translates core policing functions into a modular, web-based platform. The architecture is designed to improve operational performance, crime resolution, and community engagement.

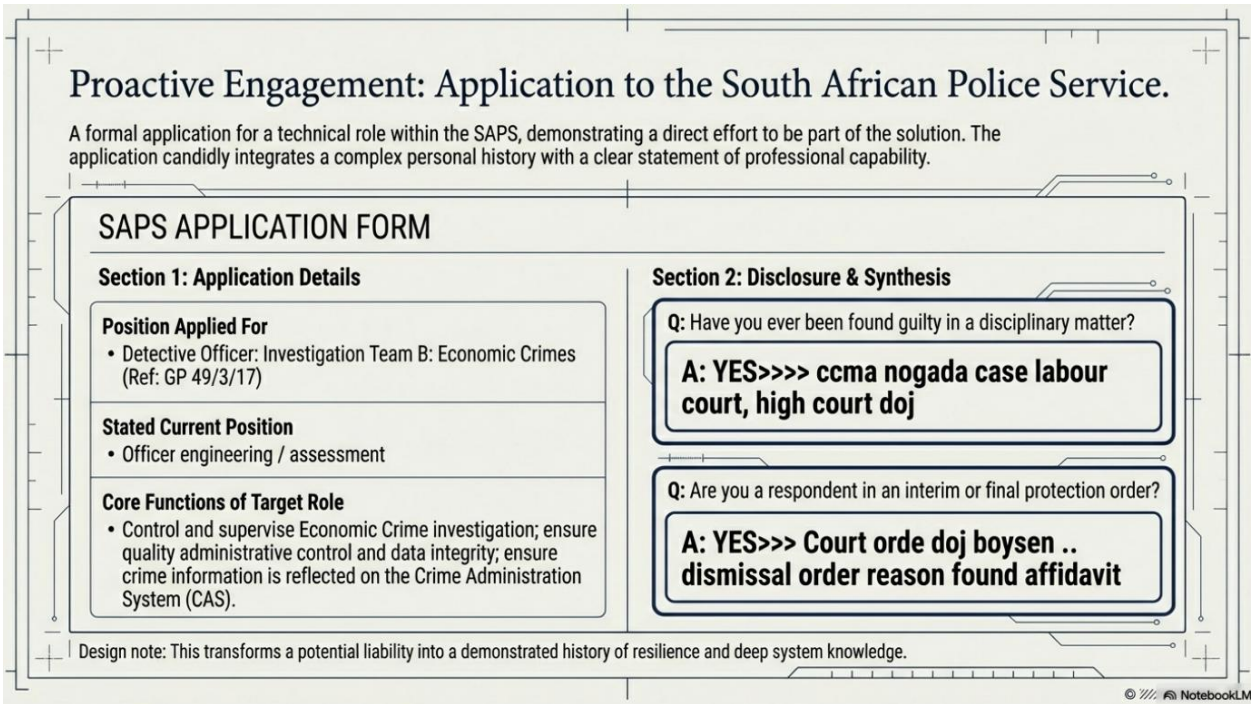


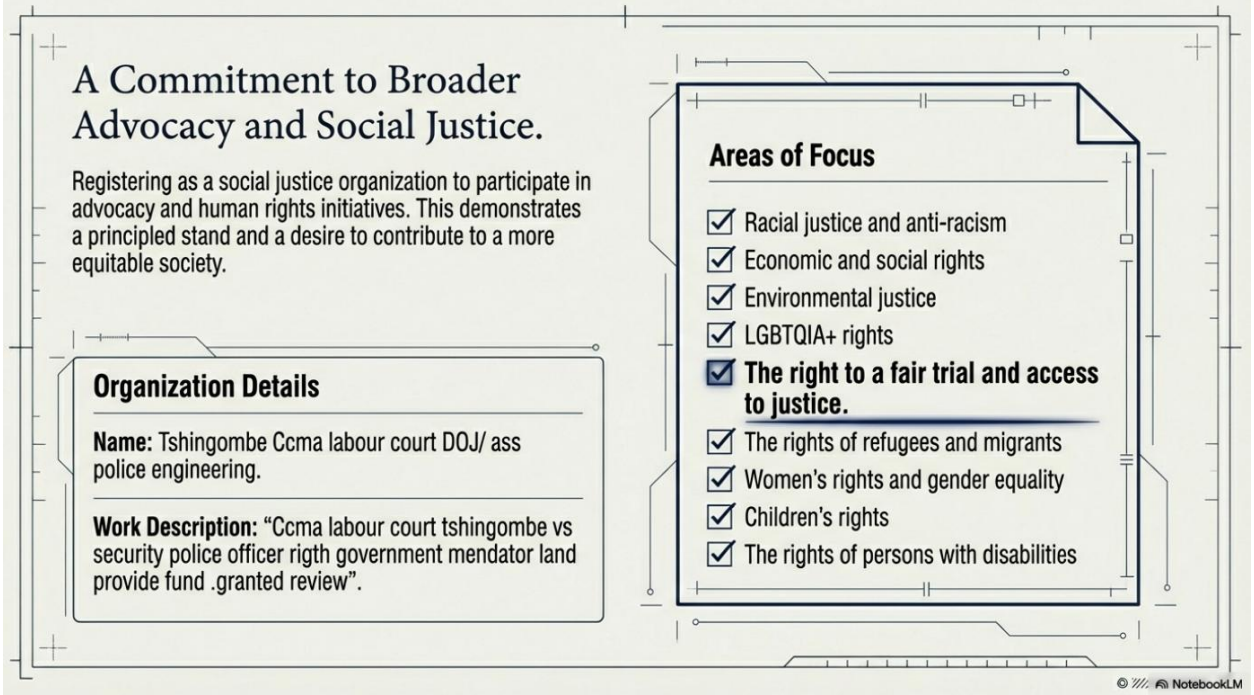
Experimental Applications

Simulate crime data entry and analysis using MIS tools.

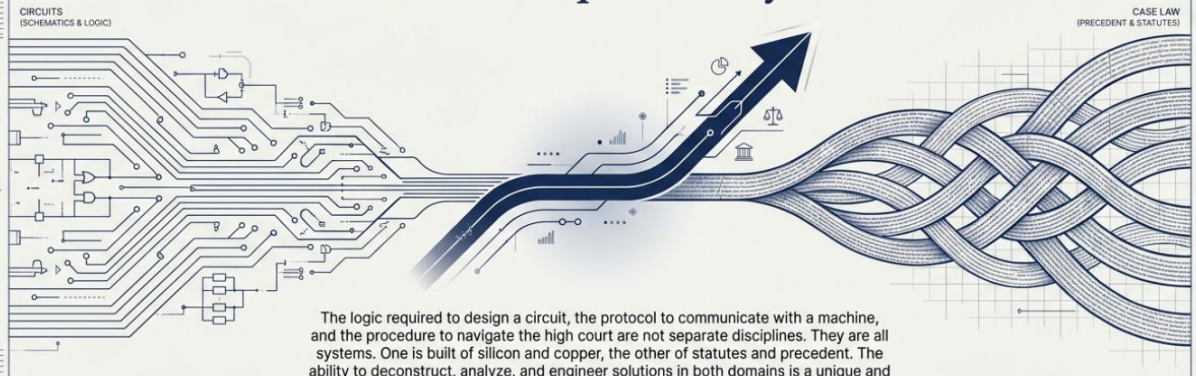
Develop crime heatmaps to identify hotspots and allocate patrols effectively.

© NotebookLM


Proactive Engagement: Application to the South African Police Service.
A formal application for a technical role within the SAPS, demonstrating a direct effort to be part of the solution. The application candidly integrates a complex personal history with a clear statement of professional capability.
SAPS APPLICATION FORM
Section 1: Application Details
Position Applied For
• Detective Officer: Investigation Team B: Economic Crimes (Ref: GP 49/3/17)
Stated Current Position
• Officer engineering / assessment
Core Functions of Target Role
• Control and supervise Economic Crime investigation; ensure quality administrative control and data integrity; ensure crime information is reflected on the Crime Administration System (CAS).
Section 2: Disclosure & Synthesis
Q: Have you ever been found guilty in a disciplinary matter?
A: YES>>>> ccma nogada case labour court, high court doj
Q: Are you a respondent in an interim or final protection order?
A: YES>>> Court orde doj boysen .. dismissal order reason found affidavit
Design note: This transforms a potential liability into a demonstrated history of resilience and deep system knowledge.
NotebookLM


A Commitment to Broader Advocacy and Social Justice.
Registering as a social justice organization to participate in advocacy and human rights initiatives. This demonstrates a principled stand and a desire to contribute to a more equitable society.
Organization Details
Name: Tshingombe Ccma labour court DOJ/ ass police engineering.
Work Description: "Ccma labour court tshingombe vs security police officer rigth government mendator land provide fund .granted review".
Areas of Focus
☑ Racial justice and anti-racism
☑ Economic and social rights
☑ Environmental justice
☑ LGBTQIA+ rights
☑ The right to a fair trial and access to justice.
☑ The rights of refugees and migrants
☑ Women's rights and gender equality
☑ Children's rights
☑ The rights of persons with disabilities
NotebookLM

A Unified Skillset for Building More Robust and Equitable Systems



The logic required to design a circuit, the protocol to communicate with a machine, and the procedure to navigate the high court are not separate disciplines. They are all systems. One is built of silicon and copper, the other of statutes and precedent. The ability to deconstruct, analyze, and engineer solutions in both domains is a unique and essential skill for addressing the most complex challenges facing society.

Vision Statement: A commitment to applying the rigorous, evidence-based principles of engineering to build more transparent, efficient, and just systems for people.

PROGRESS & JUSTICE

NotebookLM

An Archive of Systemic Engagement: Index of Pleadings and Filings

A systematic record of legal actions across multiple courts and jurisdictions. This structured approach, akin to software version control or project management, was essential for navigating the complex legal landscape.

Labour Court (Case JR 2461/15)

- Index Notices
- Notice of Motion
- Affidavit in Support of Application
- Recording Transcription (Pages 35-43)
- Notice Judgment Leave Appeal (Pages 43-49)
- Application for Leave to Appeal Head Argument (Pages 56-141)

Labour Appeal Court (Case JA 37/19)

- Notice of Motion Petition for Leave to Appeal
- Affidavit in terms of sect 44(1) complain
- Notice of Record Order Transcript
- Notice proof of service applicant execution

Department of Justice Online Portal

Service Type: Civil Law, Protection Order, Deceased Estate (used for ICT/System related queries)

List of URN/Case Numbers

- `1042024CIV004539`
- `112024CIV000013`
- `4702024FCV001046`

(and others as listed in the source)

Query Example

"My query was conflic in civil procedure between system non resolution system agreement..."

03

NotebookLM

Technology on the Front Lines: Engineering Solutions for Public Safety & Justice

MODERNIZING LAW ENFORCEMENT & LEGAL SYSTEMS

Developing Web-Based Crime Management Systems

To replace manual, paper-based processes for reporting and managing crime records.

Digitizing the Justice System

Managing legal cases like domestic violence protection orders through online applications.

Core Focus Areas for Police Modernization

Includes applied policing, crime resolution, traffic management, and community communication skills.

ENGINEERING SECURE INFRASTRUCTURE

Building Secure ATM Systems

Key components include a central processor, crypto-processor, and secure card reader.

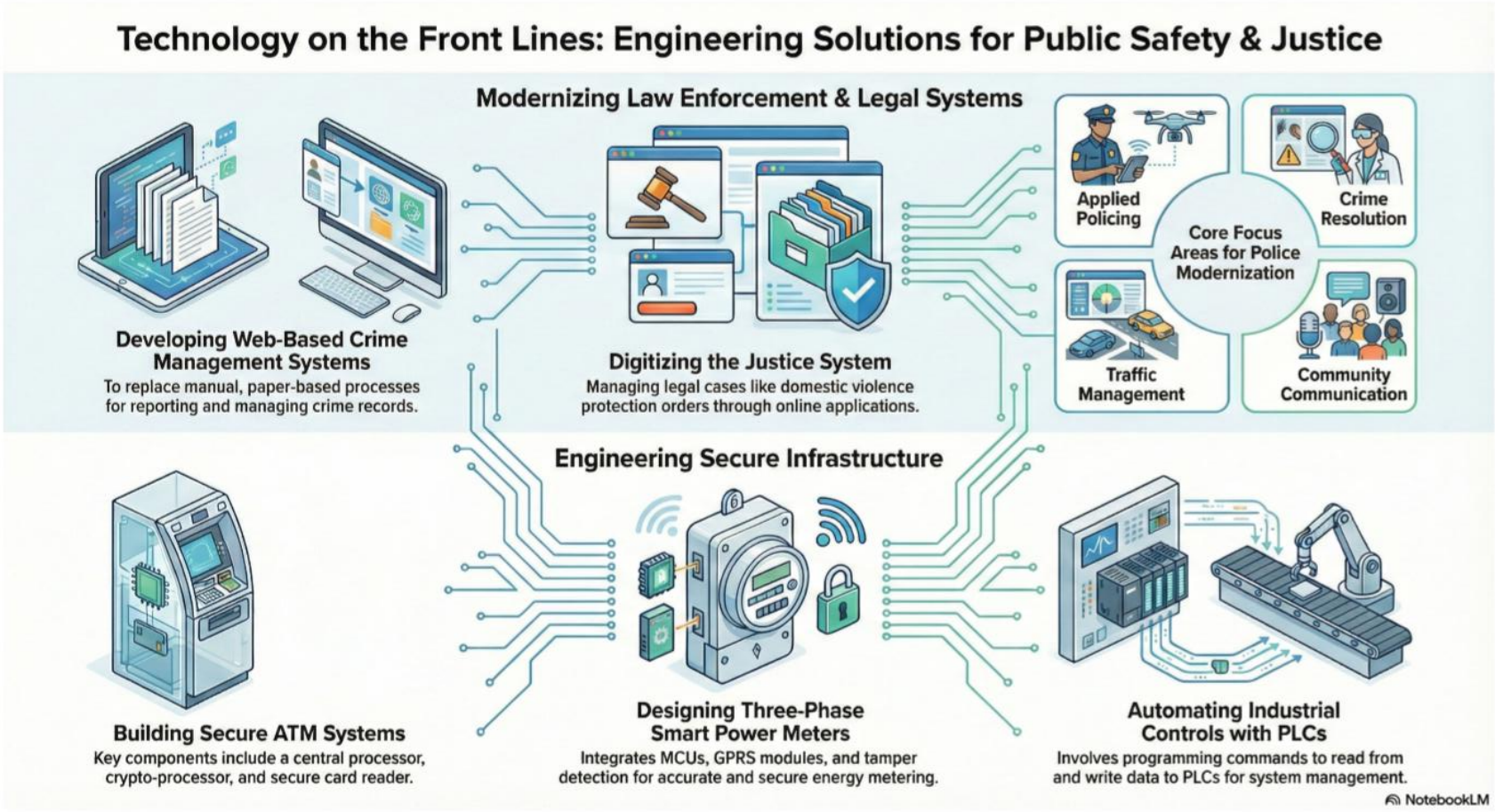
Designing Three-Phase Smart Power Meters

Integrates MCUs, GPRS modules, and tamper detection for accurate and secure energy metering.

Automating Industrial Controls with PLCs

Involves programming commands to read from and write data to PLCs for system management.

NotebookLM


Technology on the Front Lines: Engineering Solutions for Public Safety & Justice
Modernizing Law Enforcement & Legal Systems
Developing Web-Based Crime Management Systems
To replace manual, paper-based processes for reporting and managing crime records.
Digitizing the Justice System
Managing legal cases like domestic violence protection orders through online applications.
Applied Policing
Crime Resolution
Core Focus Areas for Police Modernization
Traffic Management
Community Communication
Engineering Secure Infrastructure
Building Secure ATM Systems
Key components include a central processor, crypto-processor, and secure card reader.
Designing Three-Phase Smart Power Meters
Integrates MCUs, GPRS modules, and tamper detection for accurate and secure energy metering.
Automating Industrial Controls with PLCs
Involves programming commands to read from and write data to PLCs for system management.
NotebookLM

CONFIDENTIAL - EVIDENCE FILE

The Labyrinth: Navigating and Reforming South Africa's TVET Landscape

A Practitioner's Case for an Integrated Electrical Engineering Qualification Framework

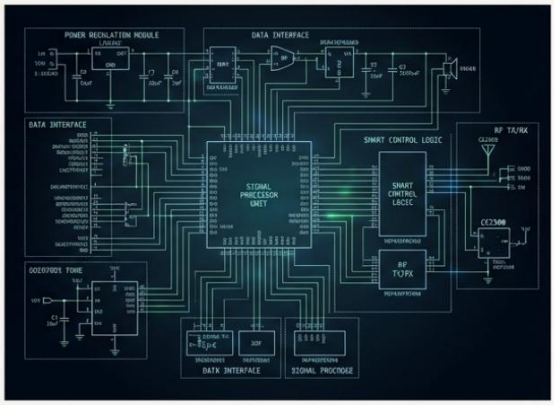
When the system is flawed, expertise is forged in navigating its complexities.
This is the story of that navigation—and the blueprint for a better way forward.

CONFIDENTIAL - EVIDENCE FILE

CONFIDENTIAL - EVIDENCE FILE

NotebookLM

A Paradox of Prolific Work and Systemic Hurdles



This dossier chronicles the extensive work of Tshingombe Tshitadi Fiston, an engineer and educator whose journey reveals a critical disconnect. While formal systems presented barriers and rejections, a substantial body of innovative work in electrical engineering, curriculum design, and applied research was consistently produced. This is the evidence of that work.

CONFIDENTIAL - EVIDENCE FILE

NotebookLM

Diagnosing a System Marked by Friction and Delay

The Technical and Vocational Education and Training (TVET) system for engineering studies is characterized by systemic irregularities that create significant barriers for learners and lecturers.

Qualification Irregularities

'**Nated ncv combination irregularity**,' non-accredited qualifications, and challenges in recognizing foreign qualifications (SAQA).

Administrative Backlogs

'**Slow to challenge factor learning** and release resultat printed statement,' '**marking in progress**,' and **extensive delays** in issuing diplomas and certificates from DHET.

Curriculum Misalignment

A gap between **theoretical knowledge** ('trade theory') and practical, industry-relevant skills required by employers like Eskom and City Power.

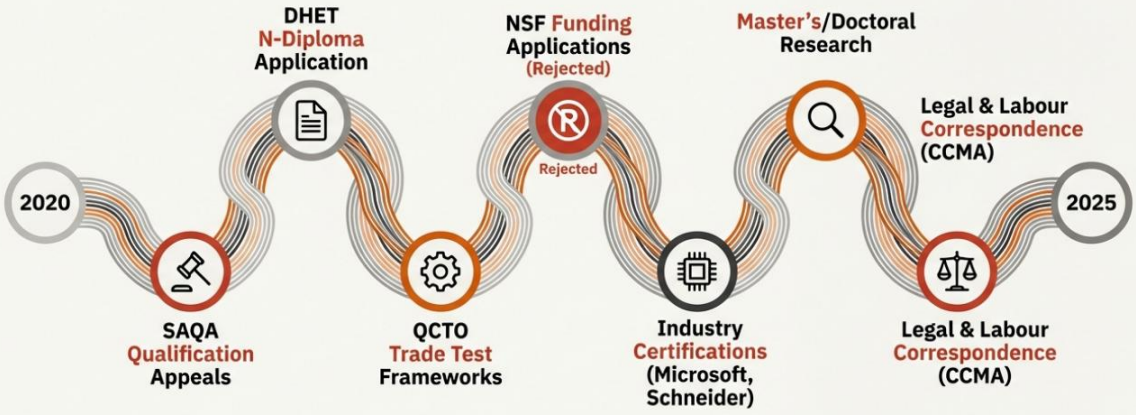
Assessment Inconsistencies

'**Non credible** process,' '**irregularite material script**,' and a lack of standardized, fair assessment policies for Portfolios of Evidence (PoE).

NotebookLM

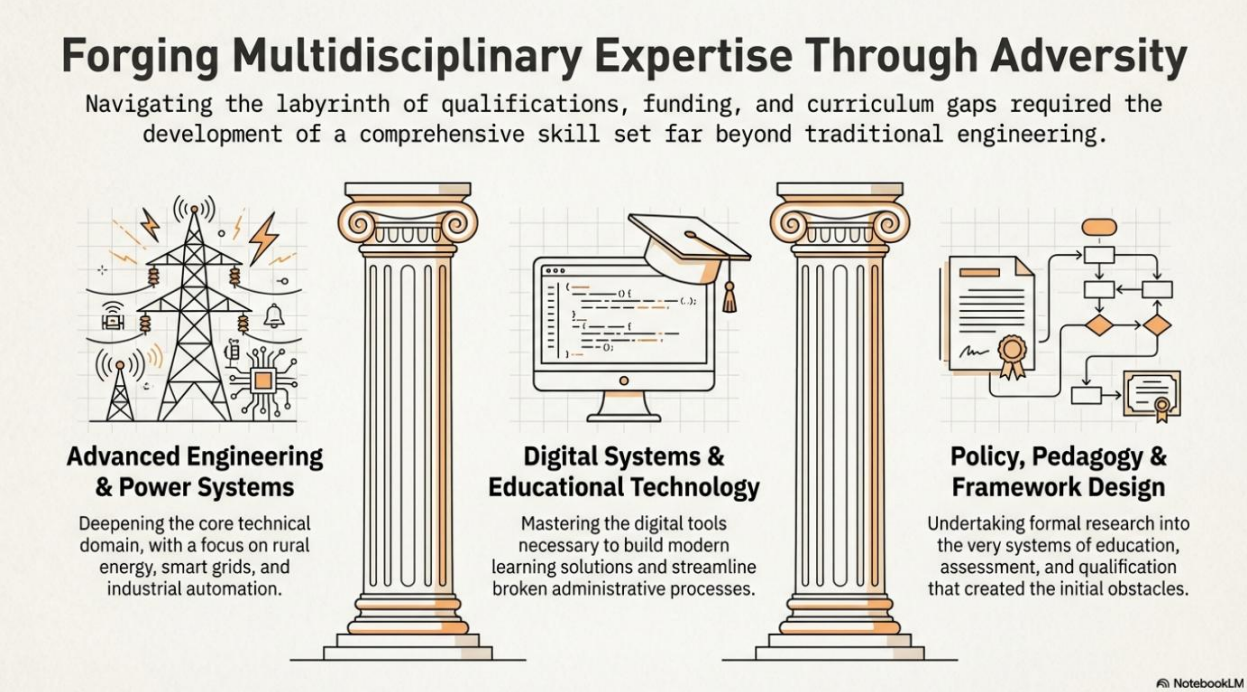
One Practitioner's Journey Through the Labyrinth

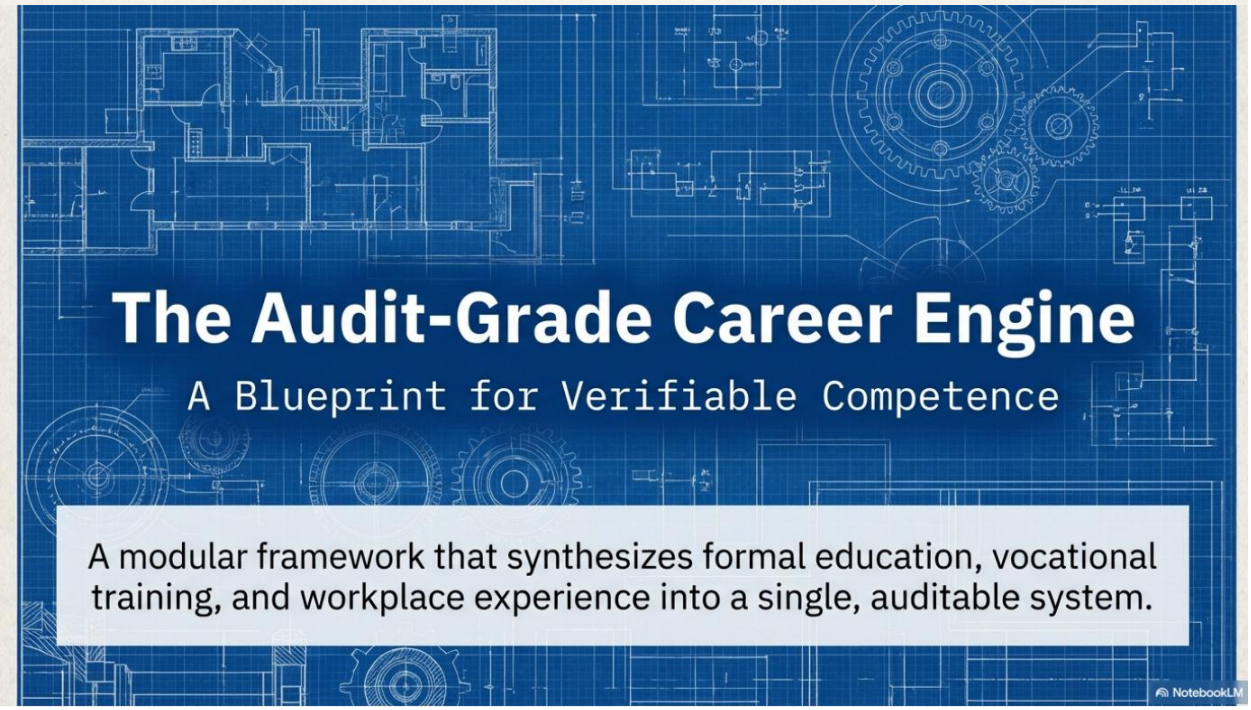
This presentation uses a multi-year case study of navigating the TVET system to diagnose its core challenges and propose a robust, integrated solution. The evidence presented is a direct result of this journey.

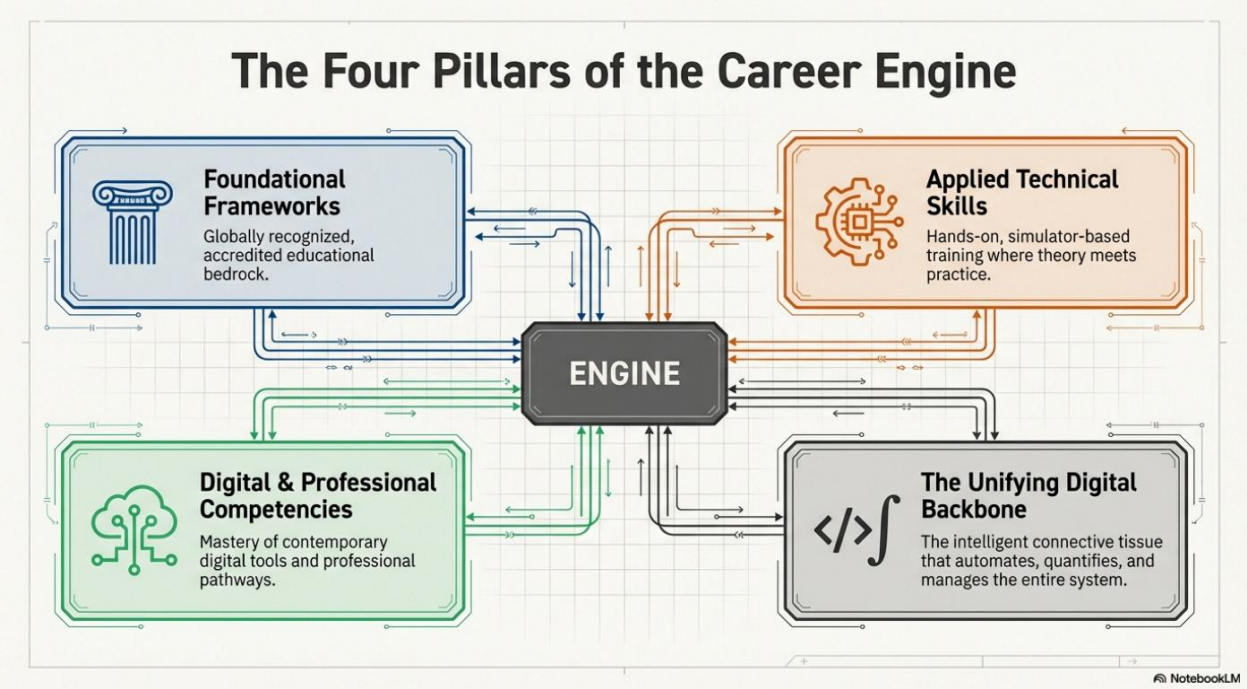


"The author is not just talking about the problem; he is the evidence."

NotebookLM


Forging Multidisciplinary Expertise Through Adversity
Navigating the labyrinth of qualifications, funding, and curriculum gaps required the development of a comprehensive skill set far beyond traditional engineering.
Advanced Engineering & Power Systems
Deepening the core technical domain, with a focus on rural energy, smart grids, and industrial automation.
Digital Systems & Educational Technology
Mastering the digital tools necessary to build modern learning solutions and streamline broken administrative processes.
Policy, Pedagogy & Framework Design
Undertaking formal research into the very systems of education, assessment, and qualification that created the initial obstacles.
NotebookLM


The Audit-Grade Career Engine
A Blueprint for Verifiable Competence
A modular framework that synthesizes formal education, vocational training, and workplace experience into a single, auditable system.
NotebookLM


The Four Pillars of the Career Engine
Foundational Frameworks
Globally recognized, accredited educational bedrock.
Applied Technical Skills
Hands-on, simulator-based training where theory meets practice.
ENGINE
Digital & Professional Competencies
Mastery of contemporary digital tools and professional pathways.
The Unifying Digital Backbone
The intelligent connective tissue that automates, quantifies, and manages the entire system.
NotebookLM

Building on a Bedrock of Global Academic and Technical Standards

Foundational Frameworks (Pillar 1)

South African Qualifications Authority (SAQA)

Qualification	National Certificate: Electrical Engineering (ID 72071)
Unit Standard ID	259037
Title	Design and install electrical wire ways
Level	NQF Level 3
Credits	8

French Higher Education

Brevet de Technicien Supérieur (BTS)

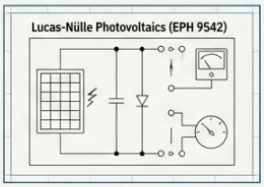
A Level 5 national diploma specializing in technical fields. The curriculum is structured in "blocs de compétences" (competency blocks), allowing for modular validation.

BTS Électrotechnique – Compétency Block RNCP41007BC01
Étude et conception préliminaire d'une installation
(Preliminary study and design of an installation)

Applied Technical Skills (Pillar 2)

German Didactic Systems (Lucas-Nülle)

Leveraging the UniTrain and InsTrain modular learning systems for hands-on experimentation in electronics, automation, and renewable energy. The system includes guided fault simulation and real-time diagnostics.

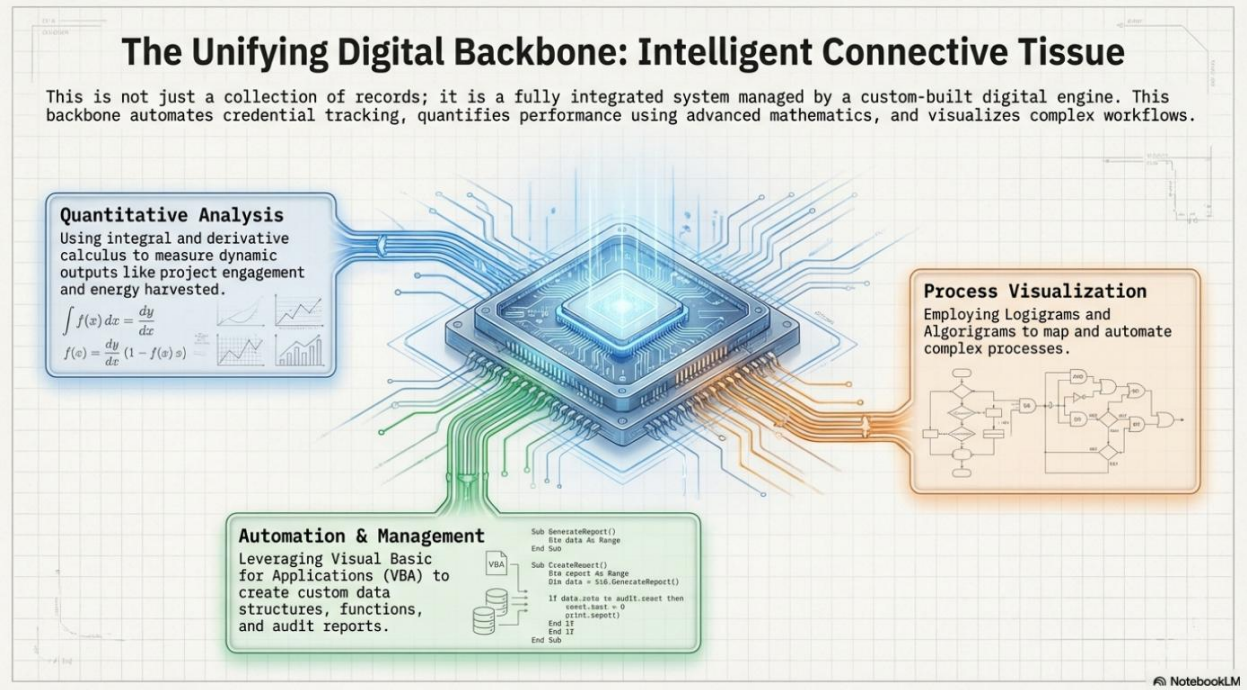


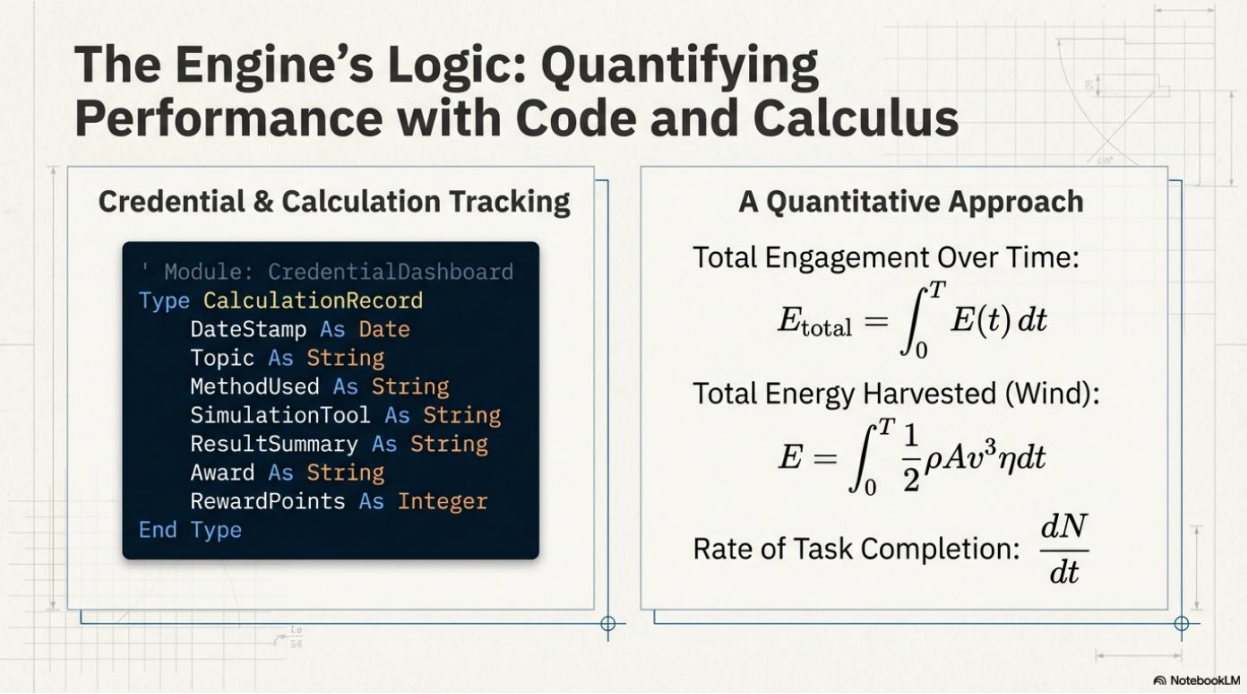
Indian Vocational Training (ITI)

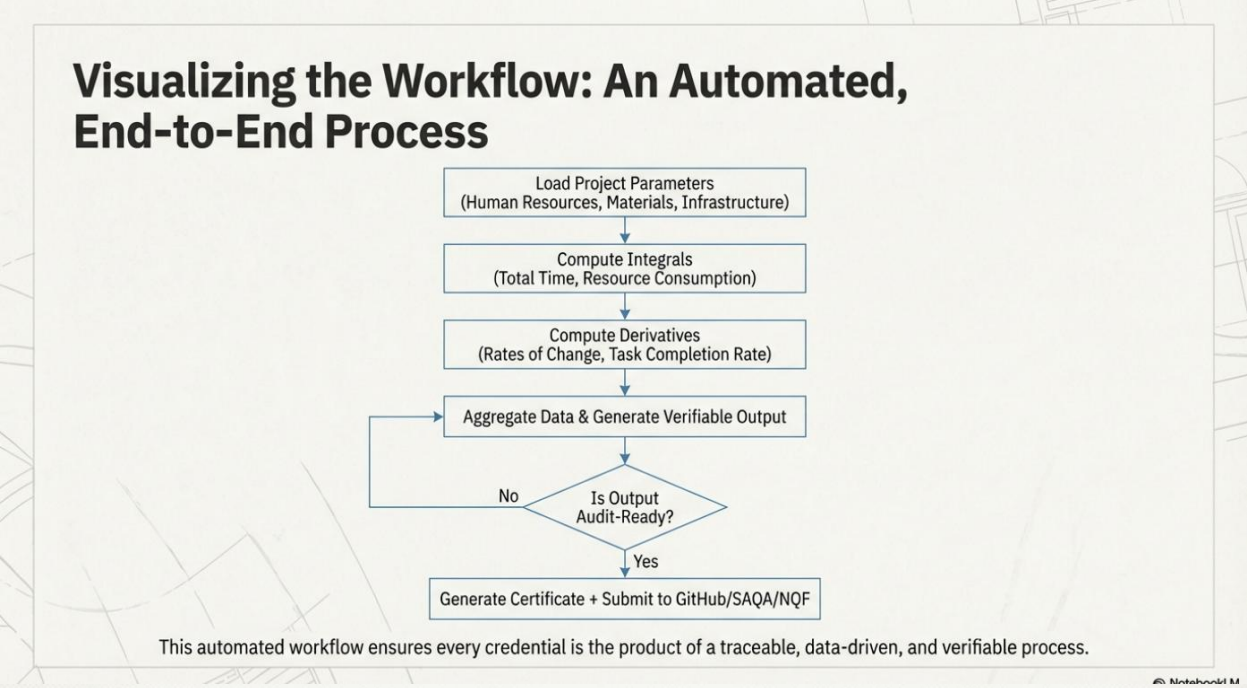
Incorporating the National Instructional Media Institute (NIMI) curriculum for Electrician Trade (NSQF Level 5), which emphasizes structured practical exercises in wiring, soldering, and workshop safety.

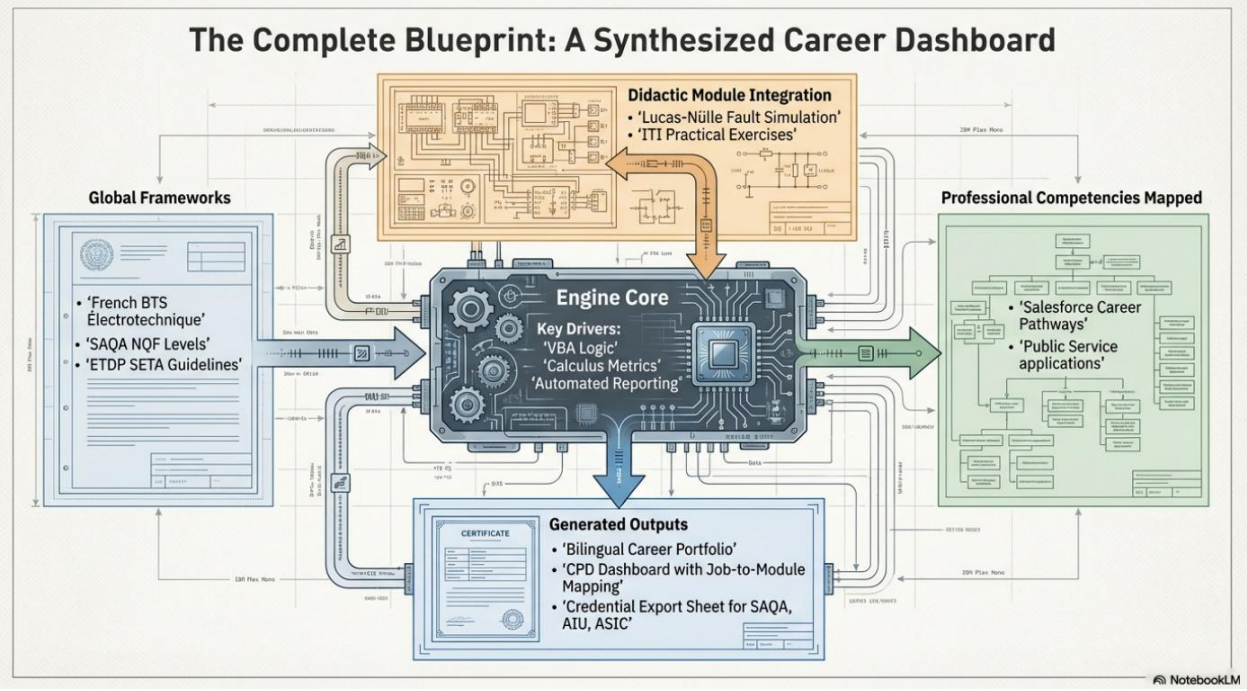
Module No.:	3
Module Title:	Wires, Joints - Soldering - U.G. Cables
Allocated Time:	125 Hrs

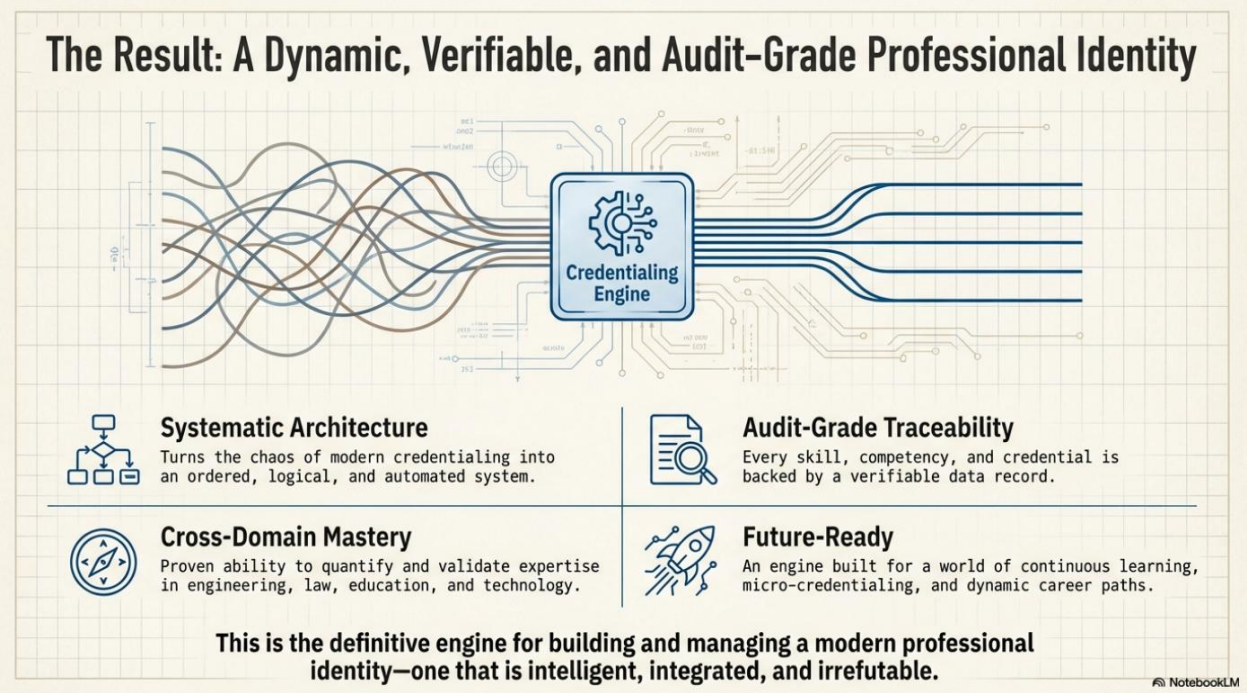
NotebookLM

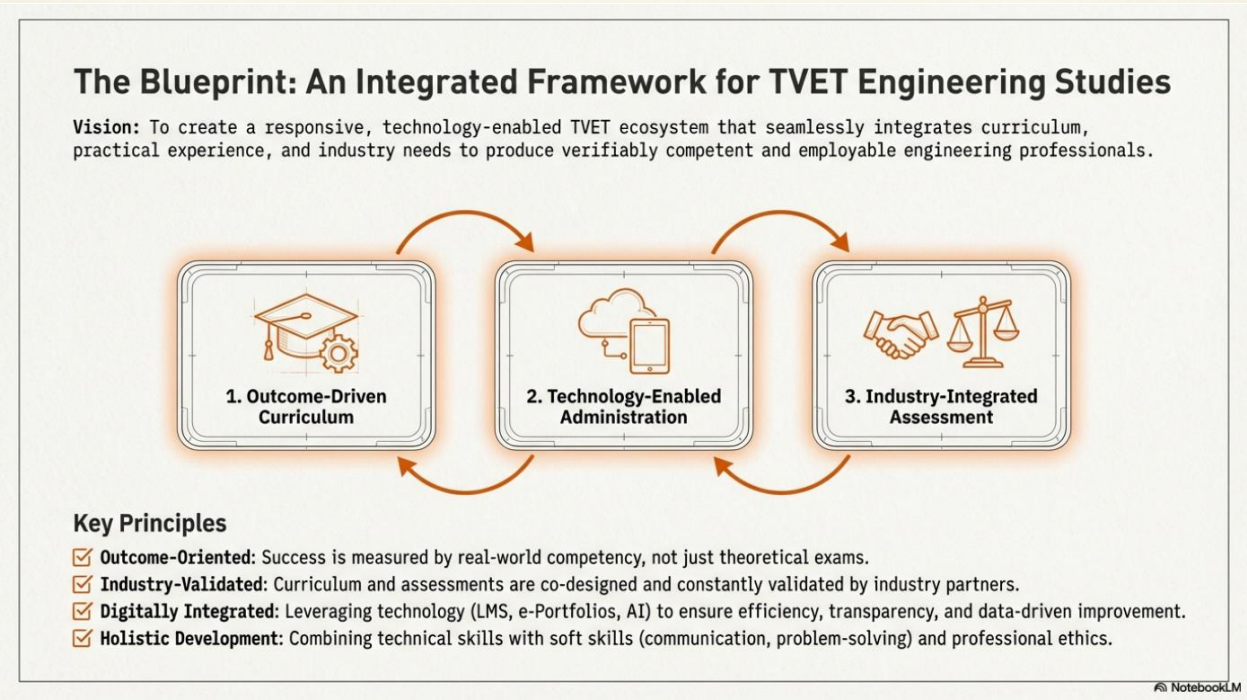

The Unifying Digital Backbone: Intelligent Connective Tissue
This is not just a collection of records; it is a fully integrated system managed by a custom-built digital engine. This backbone automates credential tracking, quantifies performance using advanced mathematics, and visualizes complex workflows.
Quantitative Analysis
Using integral and derivative calculus to measure dynamic outputs like project engagement and energy harvested.
Process Visualization
Employing Logigrams and Algorigrams to map and automate complex processes.
Automation & Management
Leveraging Visual Basic for Applications (VBA) to create custom data structures, functions, and audit reports.
VBA
NotebookLM


The Engine's Logic: Quantifying Performance with Code and Calculus
Credential & Calculation Tracking
' Module: CredentialDashboard
Type CalculationRecord
DateStamp As Date
Topic As String
MethodUsed As String
SimulationTool As String
ResultSummary As String
Award As String
RewardPoints As Integer
End Type
A Quantitative Approach
Total Engagement Over Time:
$E_{\text{total}} = \int_0^T E(t)\,dt$
Total Energy Harvested (Wind):
$E = \int_0^T \frac{1}{2}\rho A v^3 \eta dt$
Rate of Task Completion: $\frac{dN}{dt}$
NotebookLM


Visualizing the Workflow: An Automated, End-to-End Process
Load Project Parameters (Human Resources, Materials, Infrastructure)
Compute Integrals (Total Time, Resource Consumption)
Compute Derivatives (Rates of Change, Task Completion Rate)
Aggregate Data & Generate Verifiable Output
Is Output Audit-Ready?
No
Yes
Generate Certificate + Submit to GitHub/SAQA/NQF
This automated workflow ensures every credential is the product of a traceable, data-driven, and verifiable process.


The Complete Blueprint: A Synthesized Career Dashboard
Didactic Module Integration
• 'Lucas-Nülle Fault Simulation'
• 'ITI Practical Exercises'
Global Frameworks
• 'French BTS Électrotechnique'
• 'SAQA NQF Levels'
• 'ETDP SETA Guidelines'
Engine Core
Key Drivers:
'VBA Logic'
'Calculus Metrics'
'Automated Reporting'
Professional Competencies Mapped
• 'Salesforce Career Pathways'
• 'Public Service applications'
CERTIFICATE
Generated Outputs
• 'Bilingual Career Portfolio'
• 'CPD Dashboard with Job-to-Module Mapping'
• 'Credential Export Sheet for SAQA, AIU, ASIC'
NotebookLM


The Result: A Dynamic, Verifiable, and Audit-Grade Professional Identity
Credentialing Engine
Systematic Architecture
Turns the chaos of modern credentialing into an ordered, logical, and automated system.
Audit-Grade Traceability
Every skill, competency, and credential is backed by a verifiable data record.
Cross-Domain Mastery
Proven ability to quantify and validate expertise in engineering, law, education, and technology.
Future-Ready
An engine built for a world of continuous learning, micro-credentialing, and dynamic career paths.
This is the definitive engine for building and managing a modern professional identity—one that is intelligent, integrated, and irrefutable.
NotebookLM


The Blueprint: An Integrated Framework for TVET Engineering Studies
Vision: To create a responsive, technology-enabled TVET ecosystem that seamlessly integrates curriculum, practical experience, and industry needs to produce verifiably competent and employable engineering professionals.
1. Outcome-Driven Curriculum
2. Technology-Enabled Administration
3. Industry-Integrated Assessment
Key Principles
Outcome-Oriented: Success is measured by real-world competency, not just theoretical exams.
Industry-Validated: Curriculum and assessments are co-designed and constantly validated by industry partners.
Digitally Integrated: Leveraging technology (LMS, e-Portfolios, AI) to ensure efficiency, transparency, and data-driven improvement.
Holistic Development: Combining technical skills with soft skills (communication, problem-solving) and professional ethics.
NotebookLM

The Case for a New Model of Expertise

- The evidence demonstrates a sustained, high-level output of technical and pedagogical work against significant systemic friction.
- This journey has forged a unique, multi-disciplinary expertise that integrates core engineering, curriculum design, and a deep understanding of global qualification systems.
- The challenge is no longer one of validation, but of recognition and engagement. The work stands on its own merit.

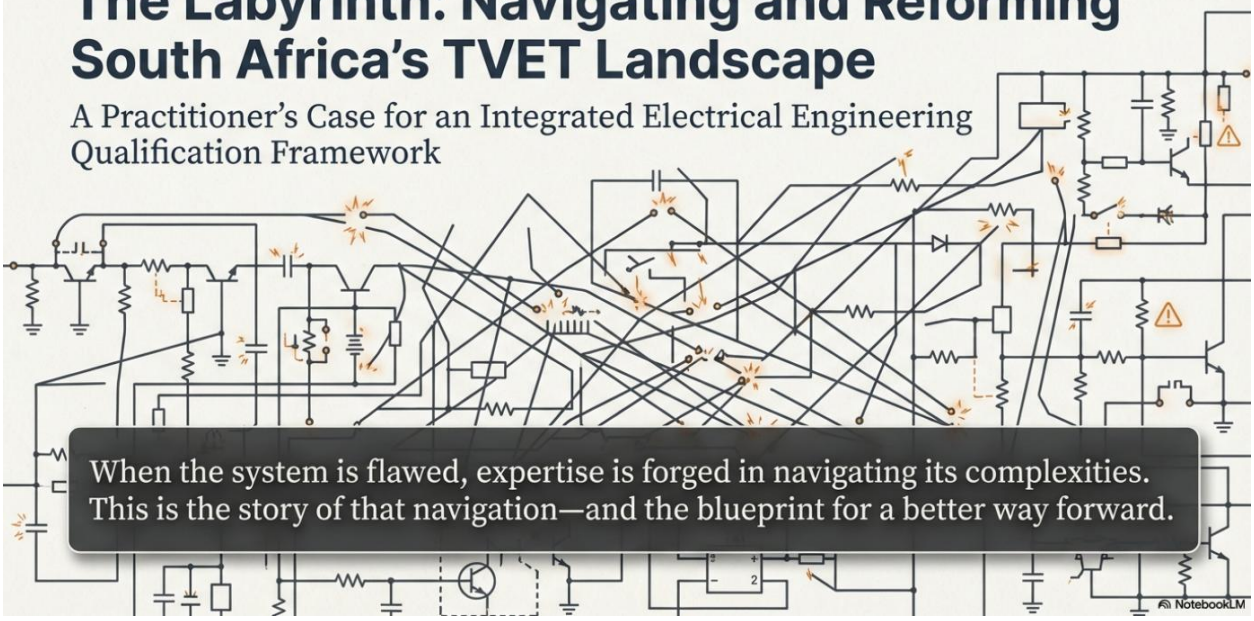
Engage the expertise. Recognize the innovation.

Name: Tshingombe Tshitadi Fiston
Email: tshingombefiston@gmail.com
Website: www.tshingombefiston.com
Profile: archive.org/details/@rdferzm

NotebookLM

The Labyrinth: Navigating and Reforming South Africa's TVET Landscape

A Practitioner's Case for an Integrated Electrical Engineering Qualification Framework

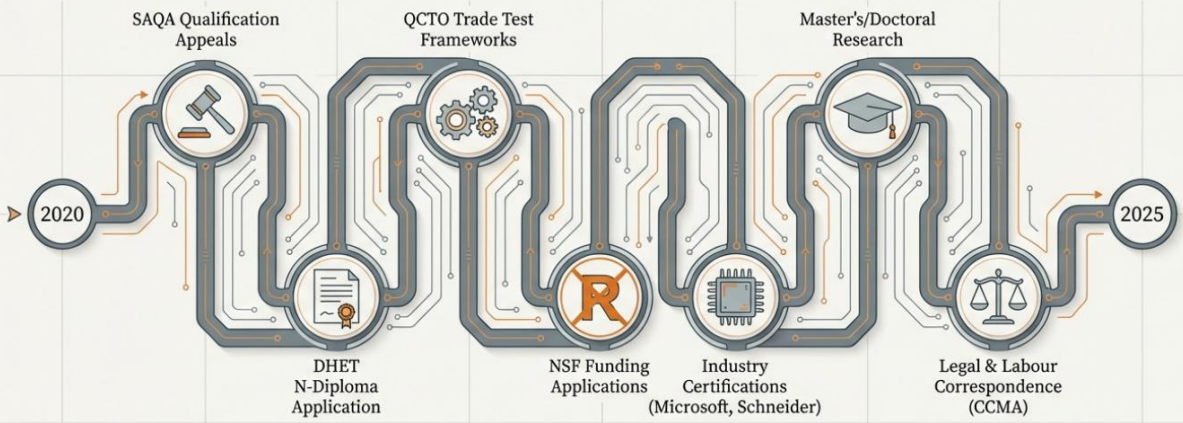


When the system is flawed, expertise is forged in navigating its complexities. This is the story of that navigation—and the blueprint for a better way forward.

NotebookLM

One Practitioner's Journey Through the Labyrinth

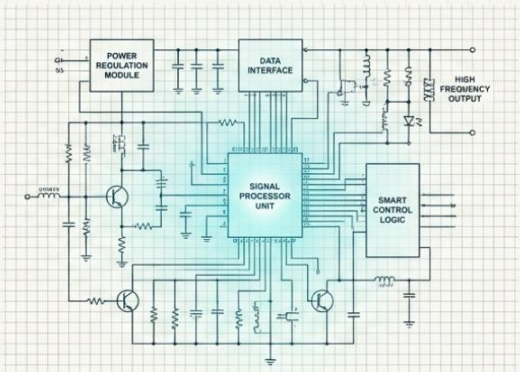
This presentation uses a multi-year case study of navigating the TVET system to diagnose its core challenges and propose a robust, integrated solution. The evidence presented is a direct result of this journey.



The author is not just talking about the problem; he is the evidence.

NotebookLM

A Paradox of Prolific Work and Systemic Hurdles



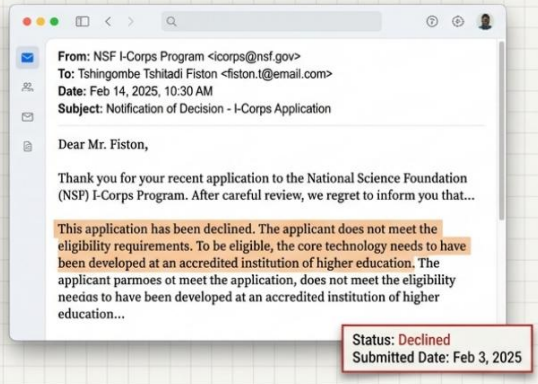
CONFIDENTIAL - EVIDENCE FILE

This dossier chronicles the extensive work of Tshingombe Tshitadi Fiston, an engineer and educator whose journey reveals a critical disconnect. While formal systems presented barriers and rejections, a substantial body of innovative work in electrical engineering, curriculum design, and applied research was consistently produced. This is the evidence of that work.

NotebookLM

Evidence Log: A Pattern of Systemic Non-Recognition

Exhibit A: NSF I-Corps Rejection Email



From: NSF I-Corps Program <icorps@nsf.gov>
To: Tshingombe Tshitadi Fiston <fiston.t@email.com>
Date: Feb 14, 2025, 10:30 AM
Subject: Notification of Decision - I-Corps Application

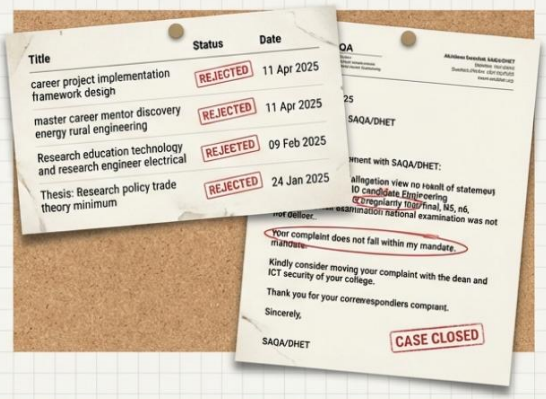
Dear Mr. Fiston,

Thank you for your recent application to the National Science Foundation (NSF) I-Corps Program. After careful review, we regret to inform you that...

This application has been declined. The applicant does not meet the eligibility requirements. To be eligible, the core technology needs to have been developed at an accredited institution of higher education. The applicant parmoes ot meet the application, does not meet the eligibility needas to have been developed at an accredited institution of higher education...

Status: Declined
Submitted Date: Feb 3, 2025

Exhibit B: F1000Research & Correspondence



Title	Status	Date
career project implementation framework design	REJECTED	11 Apr 2025
master career mentor discovery energy rural engineering	REJECTED	11 Apr 2025
Research education technology and research engineer electrical	REJECTED	09 Feb 2025
Thesis: Research policy trade theory minimum	REJECTED	24 Jan 2025

Your complaint does not fall within my mandate.

Kindly consider moving your complaint with the dean and ICT security of your college.

Thank you for your correwespondiers compiant.

Sincerely,

SAQA/DHET

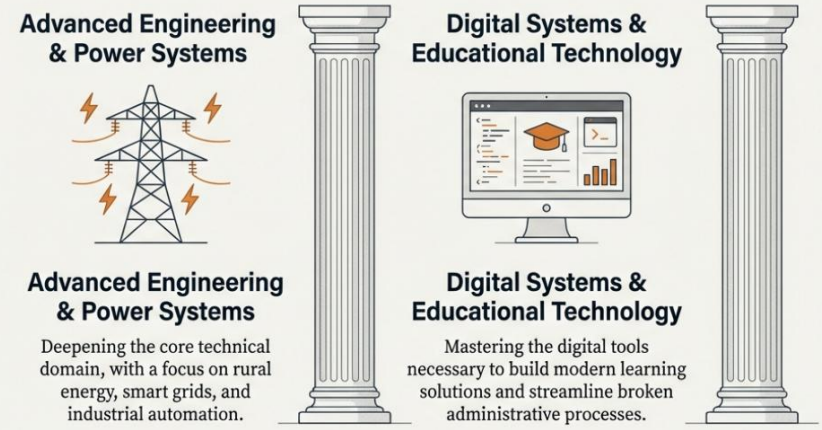
CASE CLOSED

The issue is not a lack of innovation or effort, but a system designed to exclude those without traditional credentials, regardless of their demonstrated expertise.

NotebookLM

Forging Multidisciplinary Expertise Through Adversity

Navigating the labyrinth of qualifications, funding, and curriculum gaps required the development of a comprehensive skill set far beyond traditional engineering.



Advanced Engineering & Power Systems

Deepening the core technical domain, with a focus on rural energy, smart grids, and industrial automation.

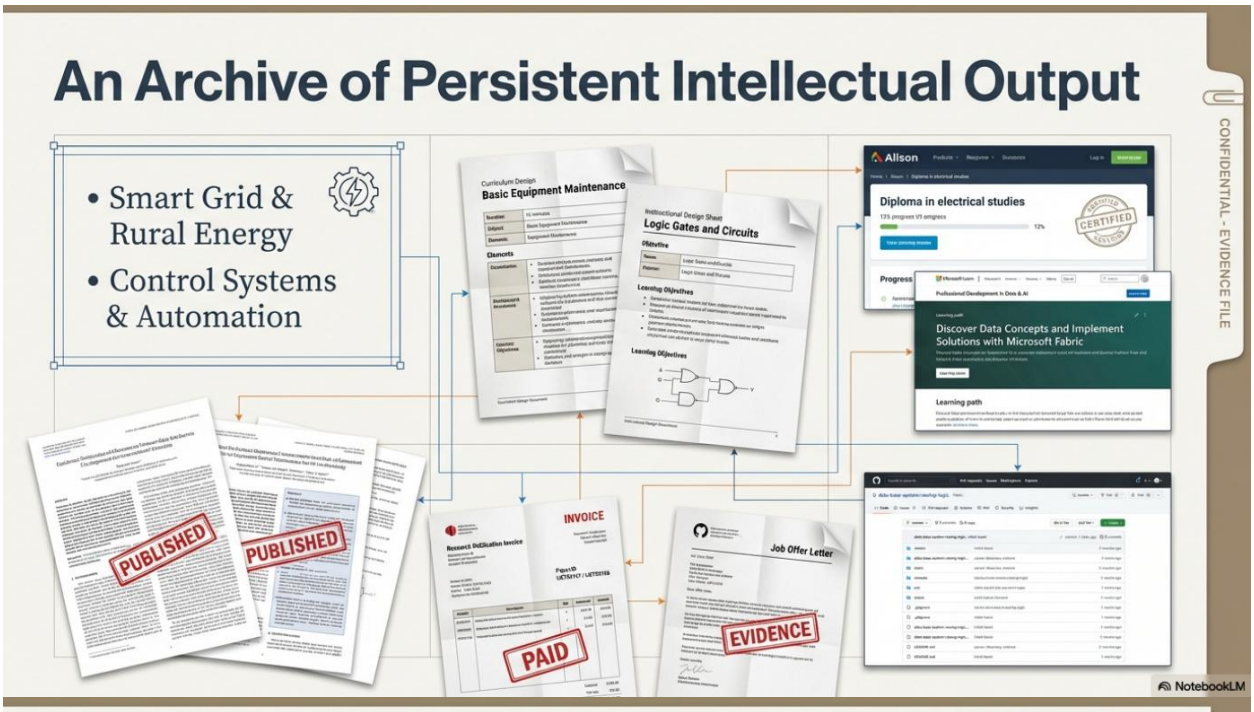
Digital Systems & Educational Technology

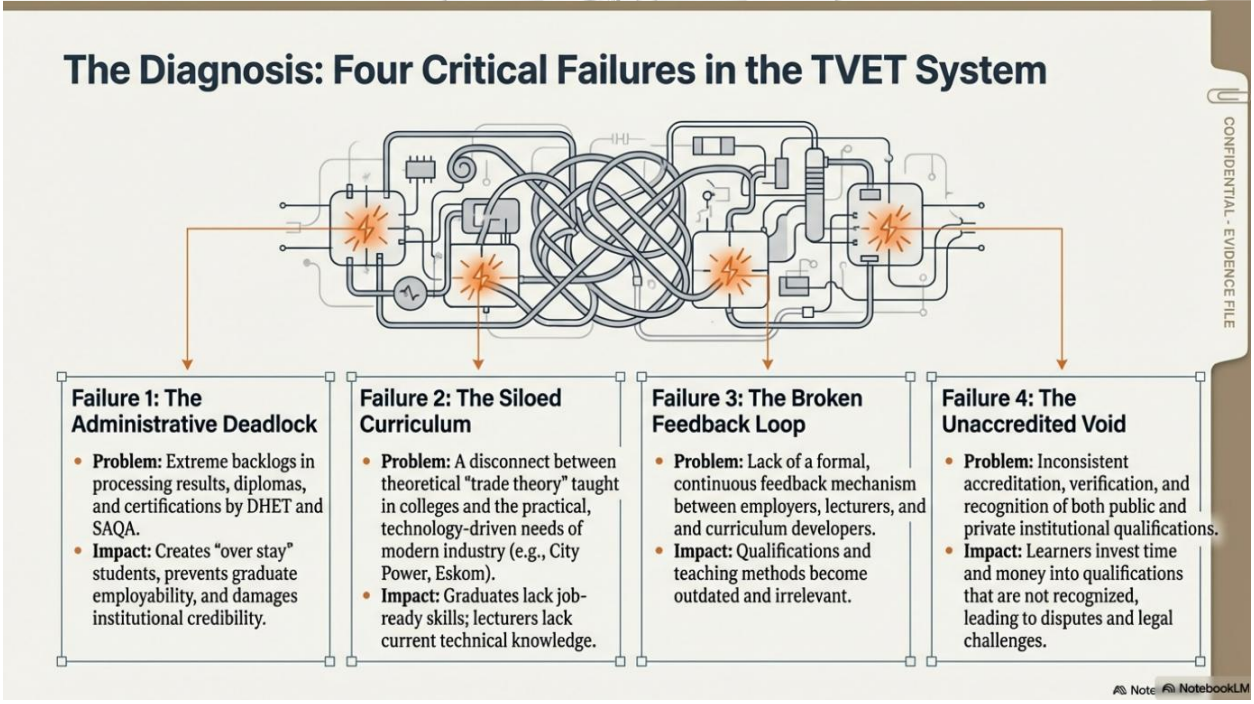
Mastering the digital tools necessary to build modern learning solutions and streamline broken administrative processes.

Policy, Pedagogy & Framework Design

Undertaking formal research into the very systems of education, assessment, and qualification that created the initial obstacles.

NotebookLM


An Archive of Persistent Intellectual Output
• Smart Grid & Rural Energy
• Control Systems & Automation
Basic Equipment Maintenance
Logic Gates and Circuits
Diploma in electrical studies
Discover Data Concepts and Implement Solutions with Microsoft Fabric
Learning path
PUBLISHED
PUBLISHED
INVOICE
PAID
Job Offer Letter
EVIDENCE
CONFIDENTIAL - EVIDENCE FILE
NotebookLM

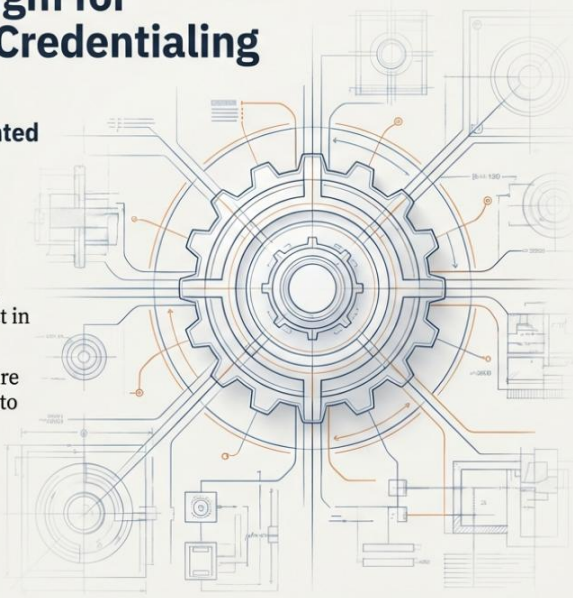

The Diagnosis: Four Critical Failures in the TVET System
Failure 1: The Administrative Deadlock
• Problem: Extreme backlogs in processing results, diplomas, and certifications by DHET and SAQA.
• Impact: Creates "over stay" students, prevents graduate employability, and damages institutional credibility.
Failure 2: The Siloed Curriculum
• Problem: A disconnect between theoretical "trade theory" taught in colleges and the practical, technology-driven needs of modern industry (e.g., City Power, Eskom).
• Impact: Graduates lack job-ready skills; lecturers lack current technical knowledge.
Failure 3: The Broken Feedback Loop
• Problem: Lack of a formal, continuous feedback mechanism between employers, lecturers, and and curriculum developers.
• Impact: Qualifications and teaching methods become outdated and irrelevant.
Failure 4: The Unaccredited Void
• Problem: Inconsistent accreditation, verification, and recognition of both public and private institutional qualifications.
• Impact: Learners invest time and money into qualifications that are not recognized, leading to disputes and legal challenges.
CONFIDENTIAL - EVIDENCE FILE
NotebookLM

A New Paradigm for Professional Credentialing

CONFIDENTIAL - EVIDENCE FILE

The Challenge: Fragmented Competence

- Resumes are static, self-reported, and difficult to verify.
- Formal qualifications (e.g., diplomas, certificates) exist in siloed databases.
- Practical, hands-on skills are rarely quantified or linked to formal credentials.



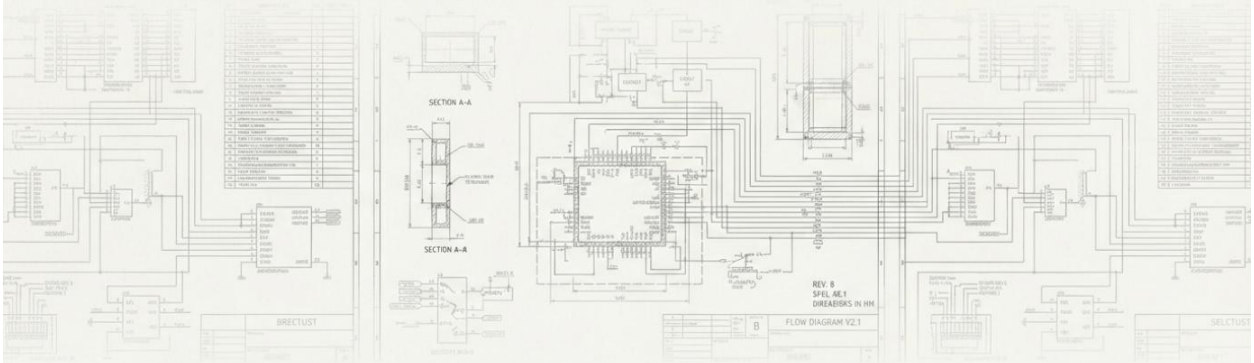
The Solution: An Integrated, Data-Driven System

- A modular system that maps every skill, qualification, and experience to a verifiable data point.
- Utilizes a quantitative backbone to measure outcomes, from project costs to energy harvested.
- Generates audit-grade documentation for accreditation bodies like SAQA, AIU, and ASIC.

NotebookLM

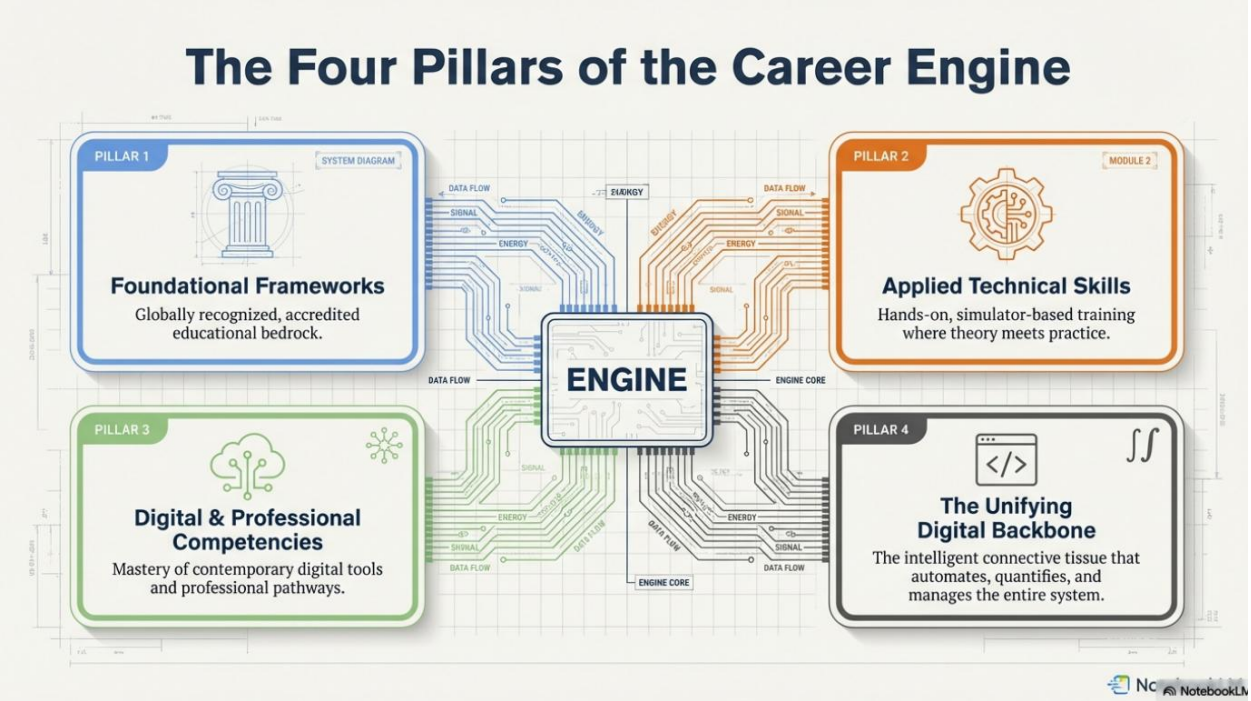
The Audit-Grade Career Engine

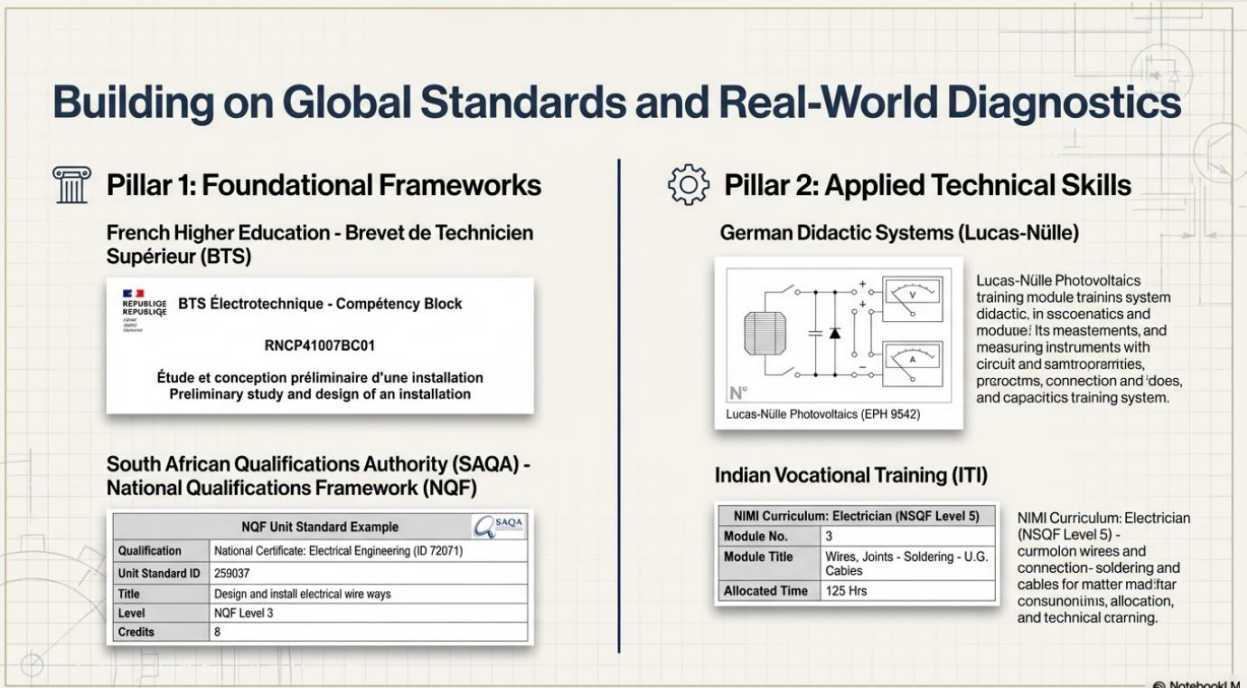
A Blueprint for Verifiable Competence

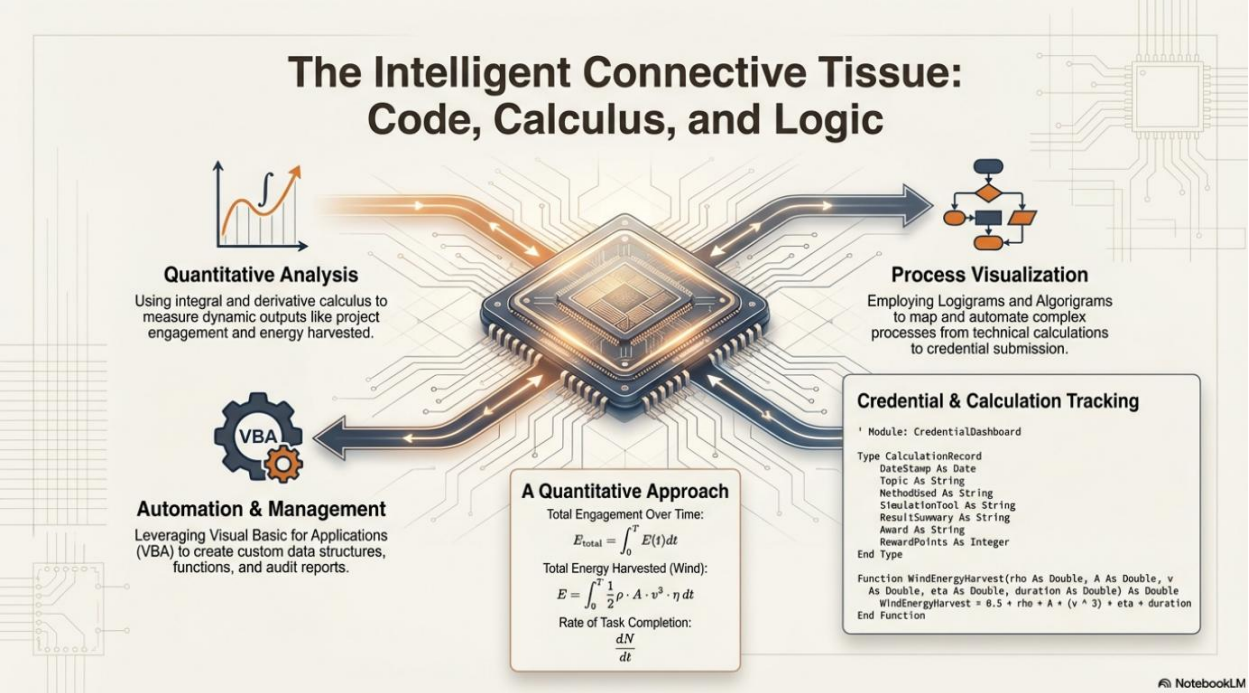


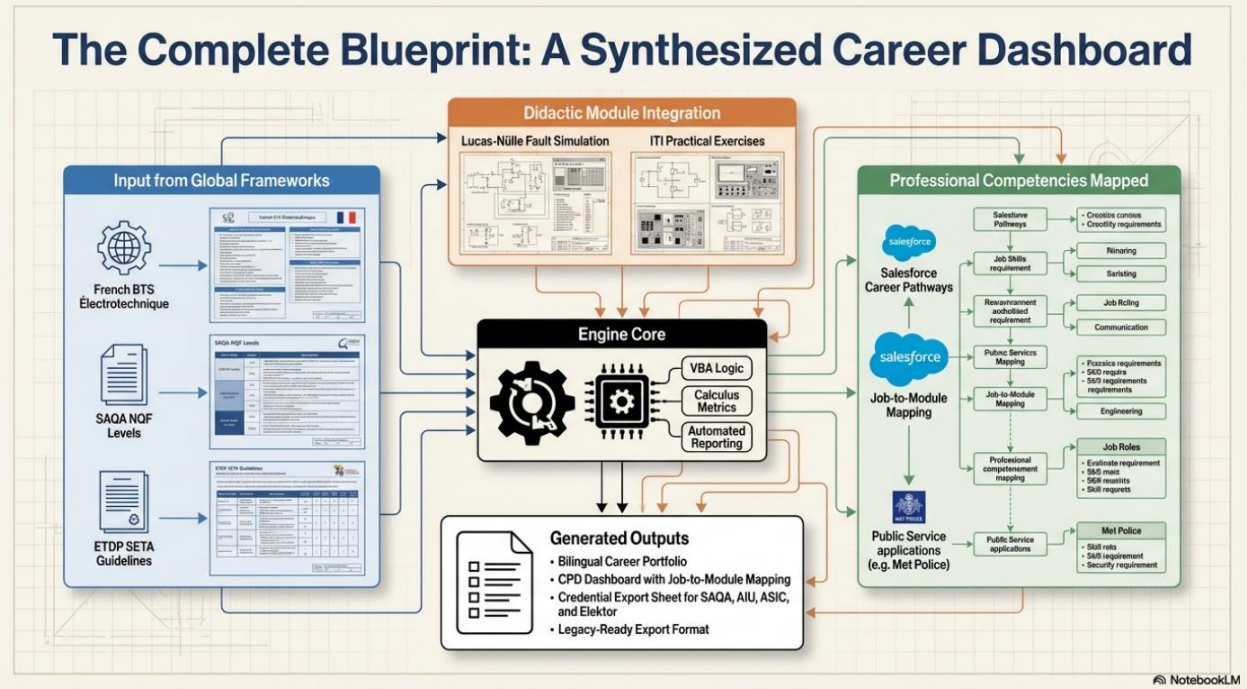
A modular framework that synthesizes formal education, vocational training, and workplace experience into a single, auditable system.

NotebookLM

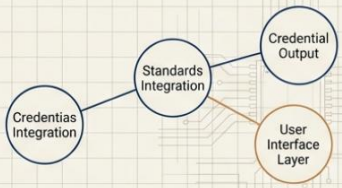

The Four Pillars of the Career Engine
PILLAR 1
SYSTEM DIAGRAM
Foundational Frameworks
Globally recognized, accredited educational bedrock.
PILLAR 2
MODULE 2
Applied Technical Skills
Hands-on, simulator-based training where theory meets practice.
ENGINE
PILLAR 3
Digital & Professional Competencies
Mastery of contemporary digital tools and professional pathways.
PILLAR 4
The Unifying Digital Backbone
The intelligent connective tissue that automates, quantifies, and manages the entire system.
DATA FLOW
SIGNAL
ENERGY
ENGINE CORE


Building on Global Standards and Real-World Diagnostics
Pillar 1: Foundational Frameworks
French Higher Education - Brevet de Technicien Supérieur (BTS)
BTS Électrotechnique - Compétency Block
RNCP41007BC01
Étude et conception préliminaire d'une installation
Preliminary study and design of an installation
South African Qualifications Authority (SAQA) - National Qualifications Framework (NQF)
NQF Unit Standard Example
Qualification | National Certificate: Electrical Engineering (ID 72071)
Unit Standard ID | 259037
Title | Design and install electrical wire ways
Level | NQF Level 3
Credits | 8
Pillar 2: Applied Technical Skills
German Didactic Systems (Lucas-Nülle)
Lucas-Nülle Photovoltaics (EPH 9542)
Lucas-Nülle Photovoltaics training module trainins system didactic, in sscoenatics and moduue! Its meastements, and measuring instruments with circuit and samtroorarnties, prarooctms, connection and 'does, and capacitics training system.
Indian Vocational Training (ITI)
NIMI Curriculum: Electrician (NSQF Level 5)
Module No. | 3
Module Title | Wires, Joints - Soldering - U.G. Cabies
Allocated Time | 125 Hrs
NIMI Curriculum: Electrician (NSQF Level 5) - curmolon wirees and connection- soldering and cables for matter madıtar consunonims, allocation, and technical crarning.


The Intelligent Connective Tissue:
Code, Calculus, and Logic
Quantitative Analysis
Using integral and derivative calculus to measure dynamic outputs like project engagement and energy harvested.
Process Visualization
Employing Logigrams and Algorigrams to map and automate complex processes from technical calculations to credential submission.
VBA
Automation & Management
Leveraging Visual Basic for Applications (VBA) to create custom data structures, functions, and audit reports.
A Quantitative Approach
Total Engagement Over Time:
$E_{total} = \int_0^T E(t)dt$
Total Energy Harvested (Wind):
$E = \int_0^T \frac{1}{2}\rho \cdot A \cdot v^3 \cdot \eta \, dt$
Rate of Task Completion:
$\frac{dN}{dt}$
Credential & Calculation Tracking
' Module: CredentialDashboard
Type CalculationRecord
DateStawp As Date
Topic As String
NethodUsed As String
SimulationTool As String
ResultSummary As String
Award As String
RewardPoints As Integer
End Type
Function WindEnergyHarvest(rho As Double, A As Double, v As Double, eta As Double, duration As Double) As Double
WindEnergyHarvest = 0.5 * rho * A * (v ^ 3) * eta * duration
End Function
NotebookLM


The Complete Blueprint: A Synthesized Career Dashboard
Didactic Module Integration
Lucas-Nülle Fault Simulation
ITI Practical Exercises
Input from Global Frameworks
French BTS Électrotechnique
SAQA NQF Levels
ETDP SETA Guidelines
Engine Core
VBA Logic
Calculus Metrics
Automated Reporting
Professional Competencies Mapped
Salesforce Career Pathways
Job-to-Module Mapping
Public Service applications (e.g. Met Police)
Generated Outputs
• Bilingual Career Portfolio
• CPD Dashboard with Job-to-Module Mapping
• Credential Export Sheet for SAQA, AIU, ASIC, and Elektor
• Legacy-Ready Export Format
NotebookLM

The Interface Layer: Dashboards, Career Planning, and Applications



Career Development Planning:

The engine powers personalized learning plans. Users can map their skills, identify gaps, and select modules from Trailhead or internal curricula to achieve their goals (e.g., Salesforce Developer, Technical Architect).

Hiring and Promotion:

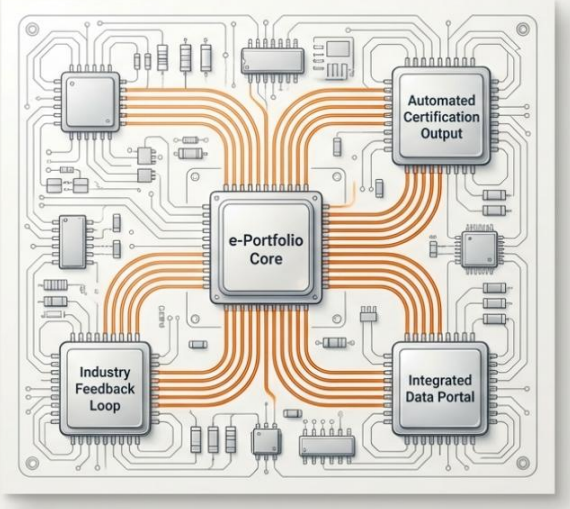
The system provides a back-end for tracking candidate eligibility and application progress, ensuring all criteria (probation status, security checks, qualifications) are met and verified.

Evidence Locker:

All achievements, from micro-credentials to formal certifications, are logged and linked, creating a comprehensive and verifiable record of a user's capabilities.

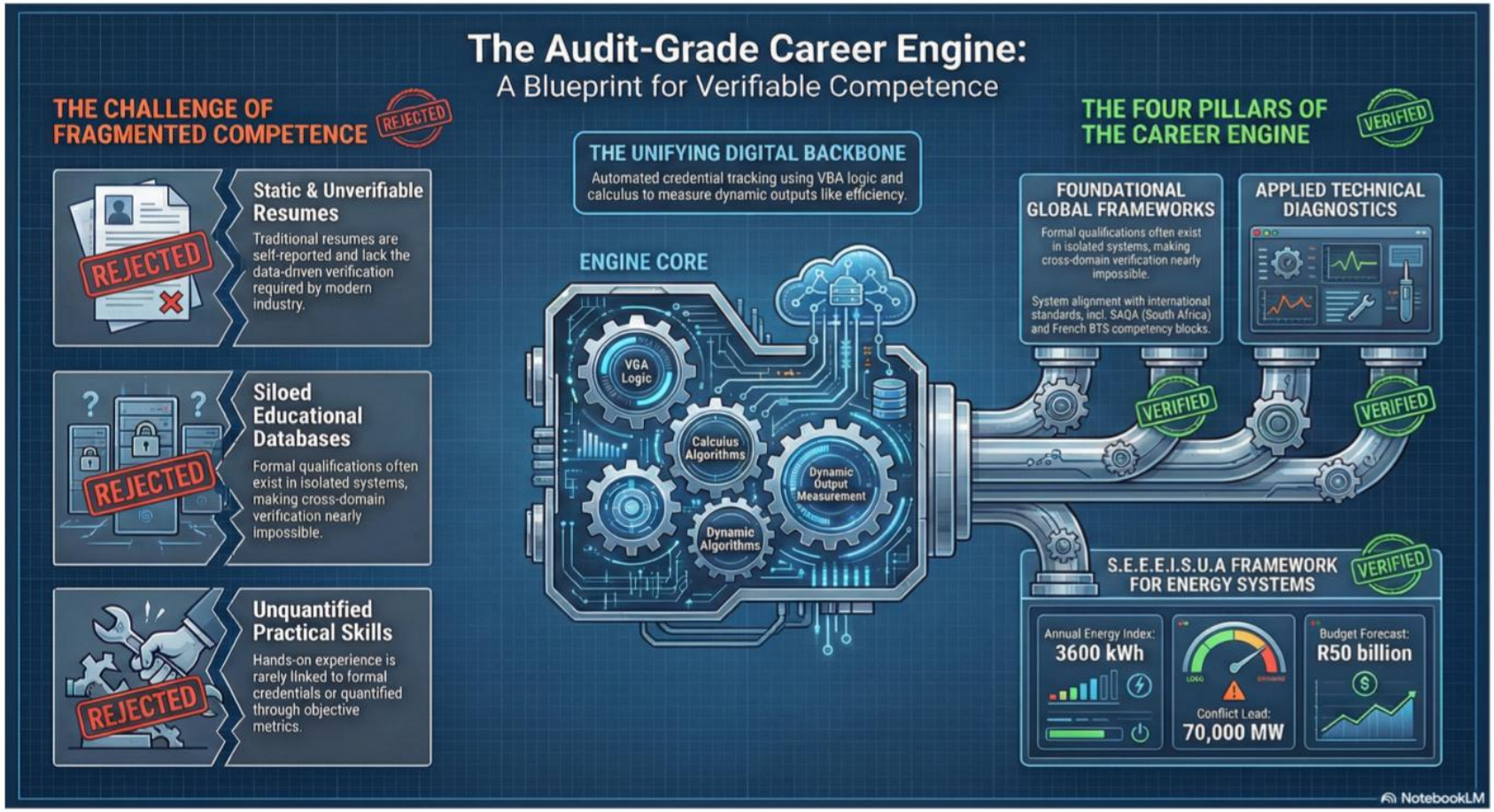
NotebookLM

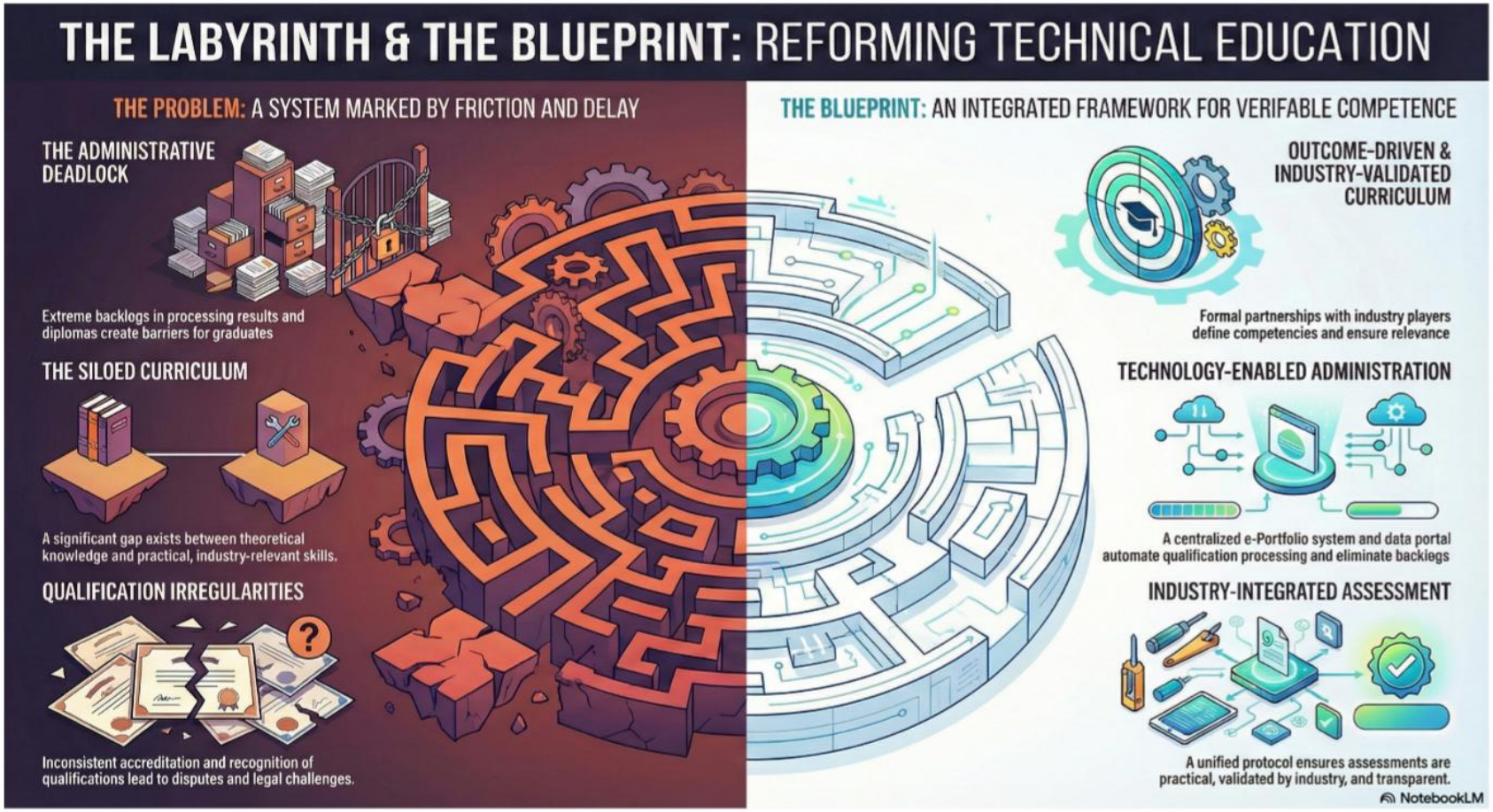
The Result: An Optimized Circuit for Engineering Talent



- **Key Outcomes of the Proposed Framework:**
  - **Improved Graduate Employability:** Professionals equipped with relevant, verified skills.
  - **Strengthened Industry-Academia Partnerships:** A sustainable system for dialogue and collaboration.
  - **Efficient & Credible Qualification System:** The elimination of administrative backlogs and restoration of trust.
  - **Data-Driven Policy & Curriculum:** A framework that provides actionable insights for continuous improvement.

NotebookLM


The Audit-Grade Career Engine:
A Blueprint for Verifiable Competence
THE CHALLENGE OF FRAGMENTED COMPETENCE
REJECTED
Static & Unverifiable Resumes
Traditional resumes are self-reported and lack the data-dnven verification required by modern industry.
REJECTED
Siloed Educational Databases
Formal qualifications often exist in isolated systems, making cross-domain verification nearly impossible.
REJECTED
Unquantified Practical Skills
Hands-on experience is rarely llnked to formal credentials or quantified through objective metrics.
THE UNIFYING DIGITAL BACKBONE
Automated credential tracking using VBA logic and calculus to measure dynamic outputs like efficiency.
ENGINE CORE
VGA Logic
Calculus Algorithms
Dynamic Output Measurement
Dynamic Algorithms
THE FOUR PILLARS OF THE CAREER ENGINE
VERIFIED
FOUNDATIONAL GLOBAL FRAMEWORKS
Formal qualifications often exist in isolated systems, making cross-domain verification nearly impossible.
System alignment with international standards, incl. SAQA (South Africa) and French BTS competency blocks.
APPLIED TECHNICAL DIAGNOSTICS
VERIFIED
VERIFIED
S.E.E.E.I.S.U.A FRAMEWORK FOR ENERGY SYSTEMS
VERIFIED
Annual Energy Index:
3600 kWh
Conflict Lead:
70,000 MW
Budget Forecast:
R50 billion
NotebookLM


THE LABYRINTH & THE BLUEPRINT: REFORMING TECHNICAL EDUCATION
THE PROBLEM: A SYSTEM MARKED BY FRICTION AND DELAY
THE ADMINISTRATIVE DEADLOCK
Extreme backlogs in processing results and diplomas create barriers for graduates
THE SILOED CURRICULUM
A significant gap exists between theoretical knowledge and practical, industry-relevant skills.
QUALIFICATION IRREGULARITIES
Inconsistent accreditation and recognition of qualifications lead to disputes and legal challenges.
THE BLUEPRINT: AN INTEGRATED FRAMEWORK FOR VERIFABLE COMPETENCE
OUTCOME-DRIVEN & INDUSTRY-VALIDATED CURRICULUM
Formal partnerships with industry players define competencies and ensure relevance
TECHNOLOGY-ENABLED ADMINISTRATION
A centralized e-Portfolio system and data portal automate qualification processing and eliminate backlogs
INDUSTRY-INTEGRATED ASSESSMENT
A unified protocol ensures assessments are practical, validated by industry, and transparent.
NotebookLM

The Professional's Lifelong Ledger

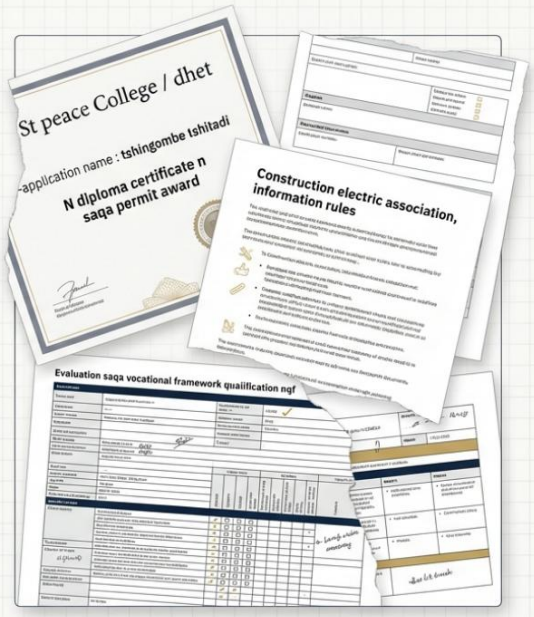
This is more than a system; it is a permanent, dynamic, and verifiable record of an individual's accumulated knowledge, practical skill, and innovative contributions. It is the definitive ledger of human potential, realized and proven.

Building the architecture for proven expertise.

NotebookLM

The Challenge of Proving Expertise

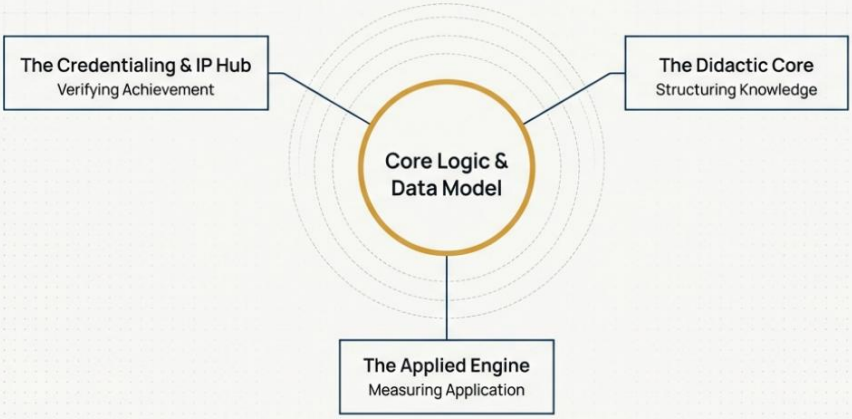
Professionals like Tshingombe Tshitadi possess a wealth of knowledge and experience. However, their achievements are often scattered across disparate documents, certifications, and institutional records, making it difficult to present a unified, verifiable picture of their mastery.


St peace College / dhet
application name : tshingombe tshitadi
N diploma certificate n saqa permit award
Construction electric association, information rules
Evaluation saqa vocational framework quaiification ngf

NotebookLM

A Unified Engine for Career Development, Credentialing, and Innovation

An integrated system for structuring knowledge, verifying application, and managing a lifelong professional portfolio. It acts as a career co-pilot, integrating disparate platforms into a single, credential-linked engine.



NotebookLM

An Architecture for Verifiable Human Potential

This system provides a modular, evidence-based foundation for professional development. It connects structured learning with practical application, culminating in verifiable credentials and traceable intellectual property. The platform is built on three interconnected pillars:

Pillar 1: The Didactic Core

How knowledge is structured and acquired through a library of modular, cross-disciplinary curricula.

Pillar 2: The Applied Engine

How knowledge is applied and measured through project-based work, simulations, and quantitative analysis.

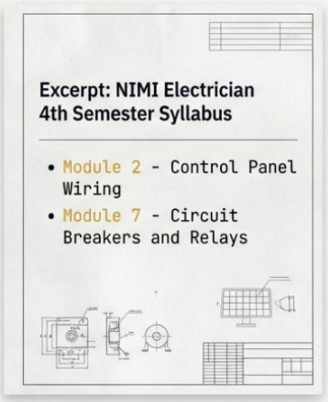
Pillar 3: The Credentialing & IP Hub

How achievement is verified through national frameworks, blockchain certificates, and a structured patent lifecycle.

NotebookLM

Pillar 1: The Didactic Core, A Library of Structured Knowledge

The foundation of the system is a comprehensive library of didactic modules. Each module is structured to map directly to qualifications and professional competencies. We begin by organizing Tshingombe's foundational knowledge from his Electrician Trade Practical syllabus.



MASTERS-LEVEL CURRICULUM

Renewable Energy Energy

Wind Energy: Understanding the Technology and Integration. Solar Energy: Exploring Photovoltaic Systems

MASTERS-LEVEL CURRICULUM

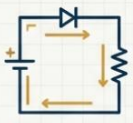
Supply Chain Management

Focus on flow of goods, information, and finances from origin to consumer

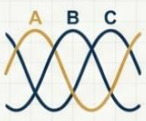
NotebookLM

Pillar 2: The Applied Engine, From Theory to Measurable Application

The Applied Engine translates didactic learning into practical, measurable outcomes. The system integrates with hands-on training platforms like the Lucas-Nülle UniTrain and InsTrain systems. Practical skills—from fault simulation in building automation to diagnostics on three-phase systems—are logged, evaluated, and certified.


DC Technology

AC Technology



Three-Phase Technology

KNX Building Automation

```
' Module: UniTrainICredentialTracker
' Purpose: Automate training progress, fault simulation, and credentialing

Type UniTrainTrainee
    Name As String
    CourseCode As String
    FaultsResolved As Integer
    CertificationStatus As String
End Type
```

NotebookLM

The Engine's Source Code: Verifiable Logic in Visual Basic

The system's backend is built on robust, auditable code. These VBA modules automate calculations for everything from renewable energy harvesting to project cost estimation, creating a verifiable record of applied knowledge.

Renewable Energy & Smart Grid Functions

```
' Renewable Energy: Wind Harvest
Function WindEnergyHarvest(rho, A, v, eta, duration) As Double
    WindEnergyHarvest = 0.5 * rho * A * (v ^ 3) * eta * duration
End Function
```

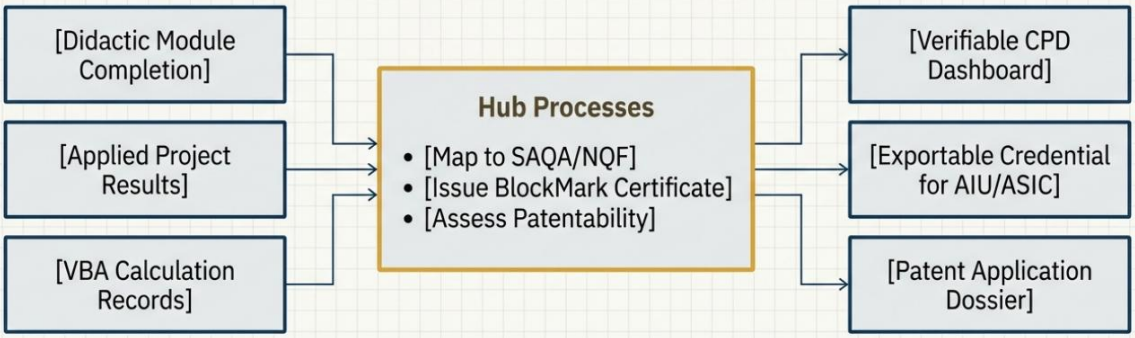
Project Cost Estimation Logic

```
' Estimate Total Project Cost
...
"Human Resource: " & FormatCurrency(entry.HumanResourceCost)
"Material: " & FormatCurrency(entry.MaterialCost)
"Building / Infrastructure: " & FormatCurrency(entry.BuildingCost)
"Total Cost: " & FormatCurrency(EstimateTotalProjectCost(...))
```

NotebookLM
NotebookLM

Pillar 3: The Credentialing & IP Hub, Verifying Mastery and Ownership

All structured learning and applied work culminates in the **Credentialing & IP Hub**. This pillar formalizes achievement through interoperable digital certificates, maps competencies to national qualification frameworks, and provides a structured process for managing intellectual property.



NotebookLM

Mapping to National and International Standards

The platform's data model is designed to align with rigorous qualification frameworks. It maps every learning activity and competency to specific unit standards, ensuring full compliance and auditability across borders.

SAQA ID 63790: National Certificate: Electrical Engineering (NQF Level 3, 133 Credits)		
Component	Unit Standard ID	Title
Core	258963	Install, test and maintain electrical equipment...

French BTS: Professional Activities	Certified Competencies
"Étude - Conception"	"Dimensionner les constituants"
"Maintenance d'une installation électrique"	"Proposer l'architecture d'un ouvrage"

NotebookLM
NotebookLM

The Mechanics of Verification: Blockchain-Ready Credentials

The system integrates with third-party services like BlockMark Technologies to issue secure, verifiable digital certifcates. This process supports both expiring (e.g., annual CPD) and non-expiring **credentials**, with options for premium blockchain features to guarantee authenticity.

BlockMark Certificate Issuance Price List (VAT Excl.)

	Item	Price (credits)	Paid for by
1	Issue a certificate with an expiry date	£1 (100) per year	Issuer
2	Issue a non-expiring certificate	£10 (1000)	Issuer
3	Issue a CPD folder with a certificate	£1 (100) per year	Issuer
4	Stamp a hash of an issued certificate on blockchain	£1 (100)*	Issuer

*Coming soon (currently beta-testing with no charge)

NotebookLM

From Research to Asset: A Structured Path to Patentability

Beyond credentials, the hub manages the lifecycle of intellectual property. It aligns with international patent standards, tracking research methodology and assessing inventions against lgainst key criteria to create an audit-ready trail for patent applications.

Patentability Criteria

1. **Novelty**: Not publicly disclosed before filing.
2. **Utility**: Must function and serve a useful purpose.
3. **Inventive Step**: Not obvious to a skilled professional in the field.

Reference: 'URFIST Paris' patent tutorials and 'Espacenet' database for prior art searches.

VBA Logic for Patent Tracking

```
' Module: Research and Patent Lifecycle Tracker

Type ResearchPatentProject
    ProjectID As String
    PatentNovelty As Boolean
    PatentUtility As Boolean
    PatentInventiveStep As Boolean
End Type
```

NotebookLM

Tshingombe's Integrated Career Engine

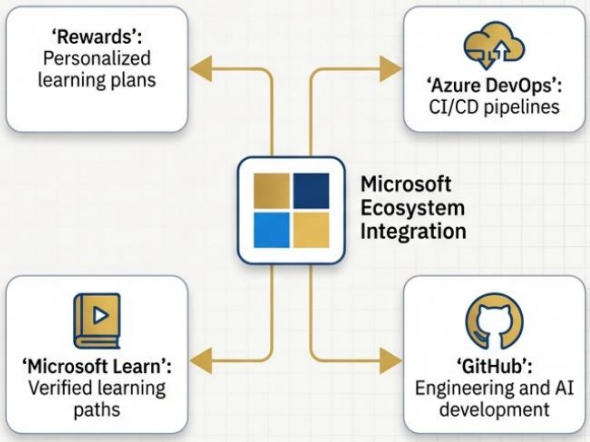
The system is designed to be a lifelong career co-pilot. For a professional like Tshingombe, it integrates disparate platforms into a single, credential-linked engine, supporting everything from job applications to advanced engineering certifications.

Metropolitan Police Application

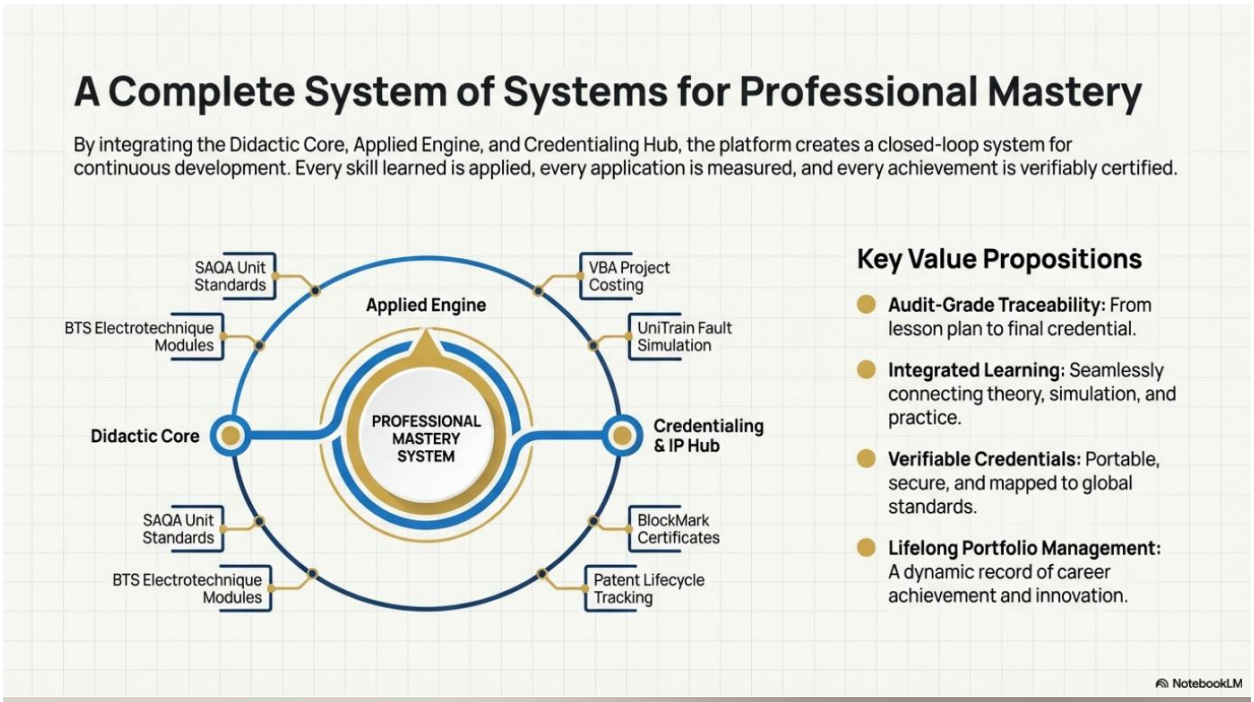
Current Band/Rank:	Detective Inspector
Employee number:	23456788

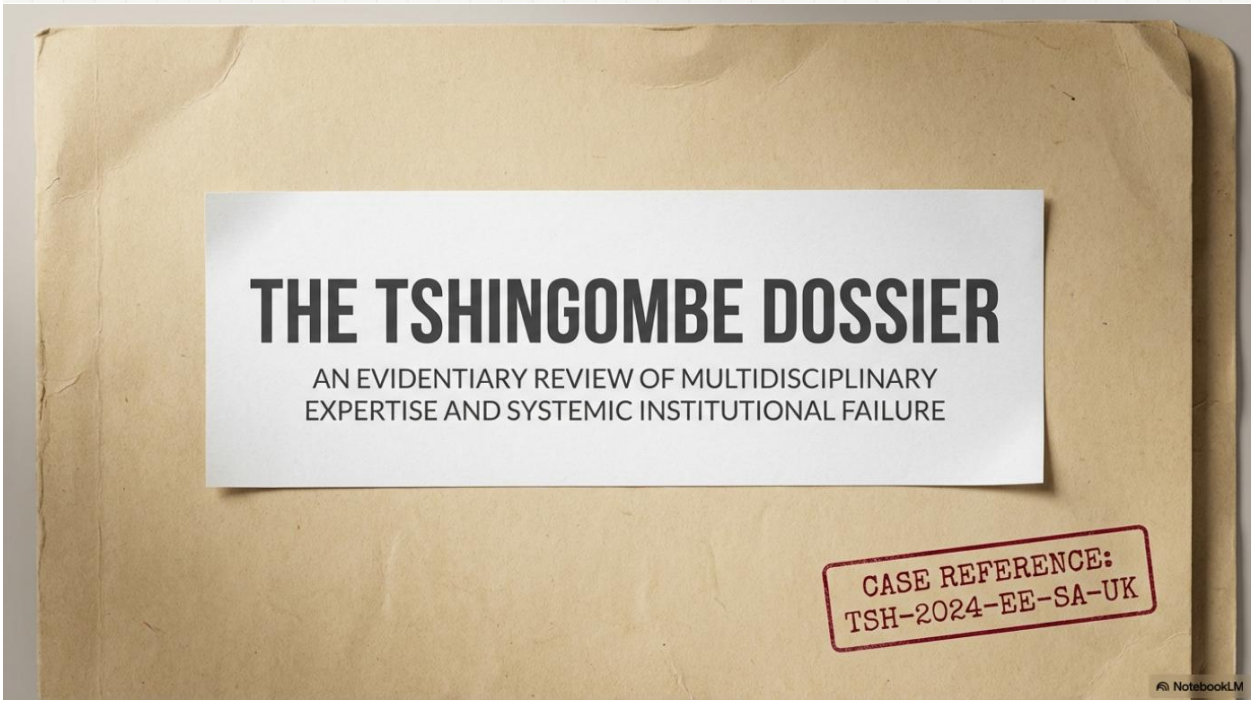
Verified Credentials

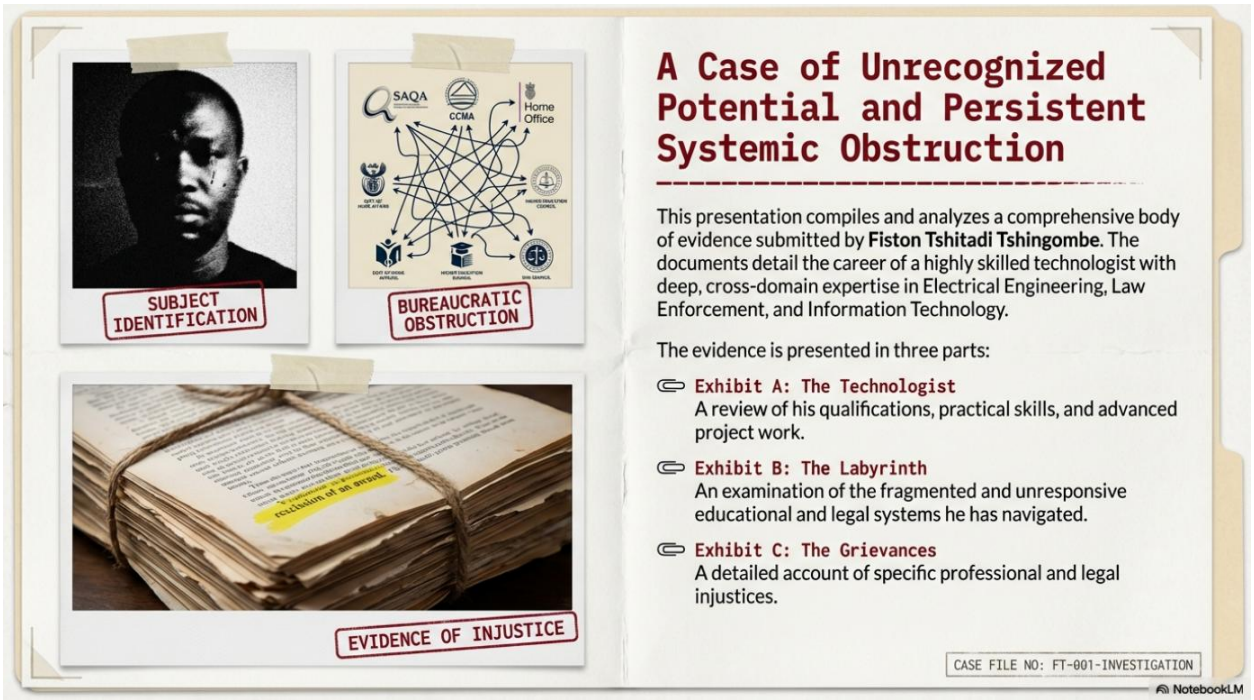
- TRAILHEAD — Tshingombe, IBM Plex Sans Medium
- Einstein Discovery Basics, IBM Plex Sans Medium
- Prompt Engineering Techniques, IBM Plex Sans Medium


'Rewards': Personalized learning plans
'Azure DevOps': CI/CD pipelines
Microsoft Ecosystem Integration
'Microsoft Learn': Verified learning paths
'GitHub': Engineering and AI development

NotebookLM


A Complete System of Systems for Professional Mastery
By integrating the Didactic Core, Applied Engine, and Credentialing Hub, the platform creates a closed-loop system for continuous development. Every skill learned is applied, every application is measured, and every achievement is verifiably certified.
SAQA Unit Standards
BTS Electrotechnique Modules
Applied Engine
VBA Project Costing
UniTrain Fault Simulation
Didactic Core
PROFESSIONAL MASTERY SYSTEM
Credentialing & IP Hub
SAQA Unit Standards
BTS Electrotechnique Modules
BlockMark Certificates
Patent Lifecycle Tracking
Key Value Propositions
Audit-Grade Traceability: From lesson plan to final credential.
Integrated Learning: Seamlessly connecting theory, simulation, and practice.
Verifiable Credentials: Portable, secure, and mapped to global standards.
Lifelong Portfolio Management: A dynamic record of career achievement and innovation.
NotebookLM


THE TSHINGOMBE DOSSIER
AN EVIDENTIARY REVIEW OF MULTIDISCIPLINARY EXPERTISE AND SYSTEMIC INSTITUTIONAL FAILURE
CASE REFERENCE: TSH-2024-EE-SA-UK
NotebookLM


SUBJECT IDENTIFICATION
SAQA
CCMA
Home Office
BUREAUCRATIC OBSTRUCTION
EVIDENCE OF INJUSTICE
A Case of Unrecognized Potential and Persistent Systemic Obstruction
This presentation compiles and analyzes a comprehensive body of evidence submitted by Fiston Tshitadi Tshingombe. The documents detail the career of a highly skilled technologist with deep, cross-domain expertise in Electrical Engineering, Law Enforcement, and Information Technology.
The evidence is presented in three parts:
Exhibit A: The Technologist
A review of his qualifications, practical skills, and advanced project work.
Exhibit B: The Labyrinth
An examination of the fragmented and unresponsive educational and legal systems he has navigated.
Exhibit C: The Grievances
A detailed account of specific professional and legal injustices.
CASE FILE NO: FT-001-INVESTIGATION
NotebookLM

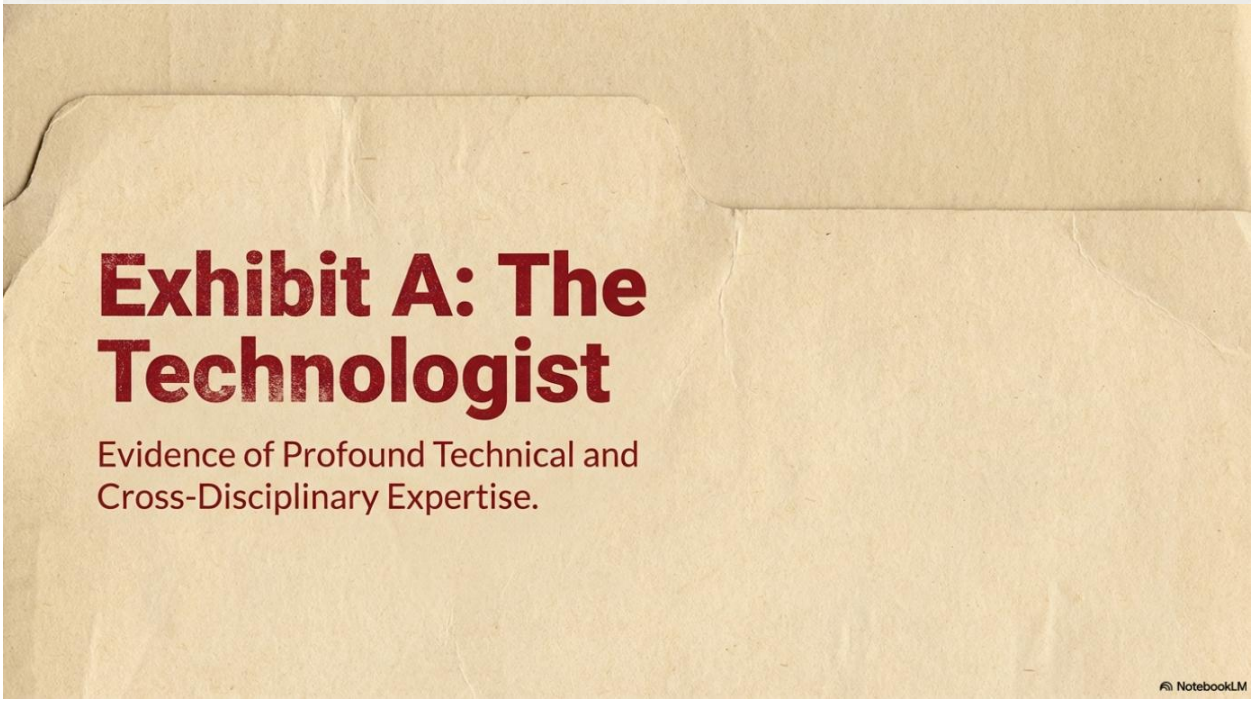
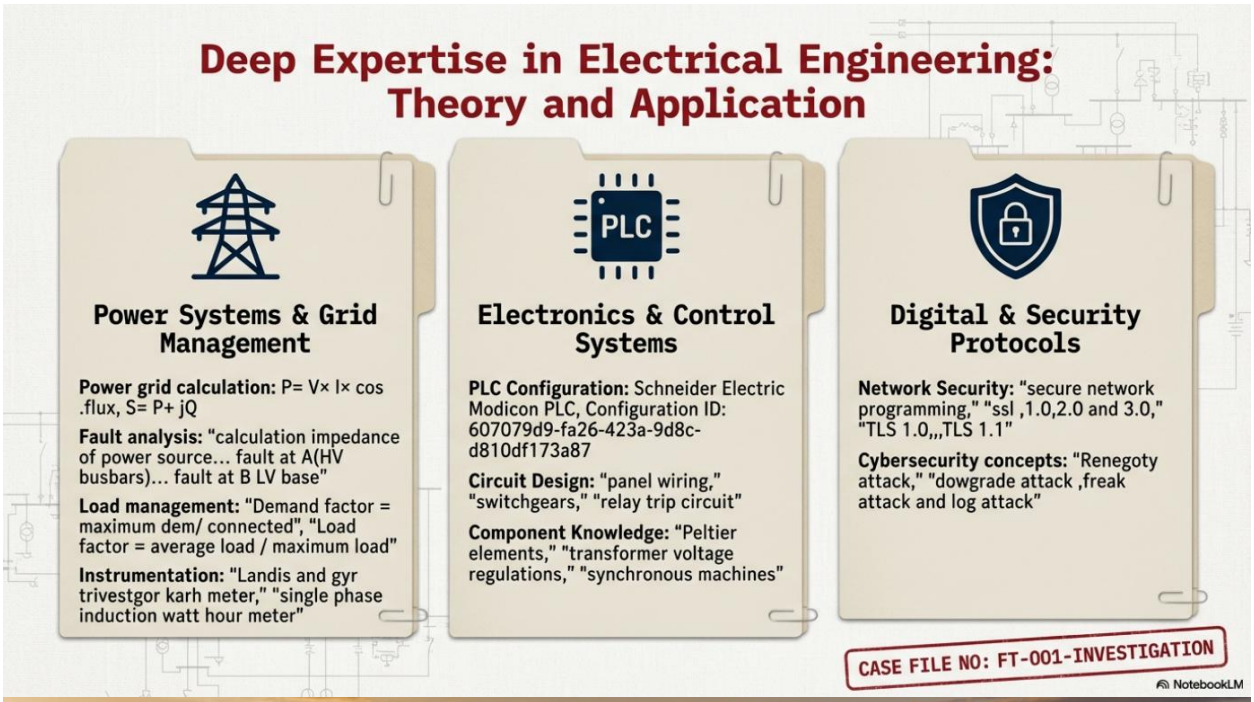
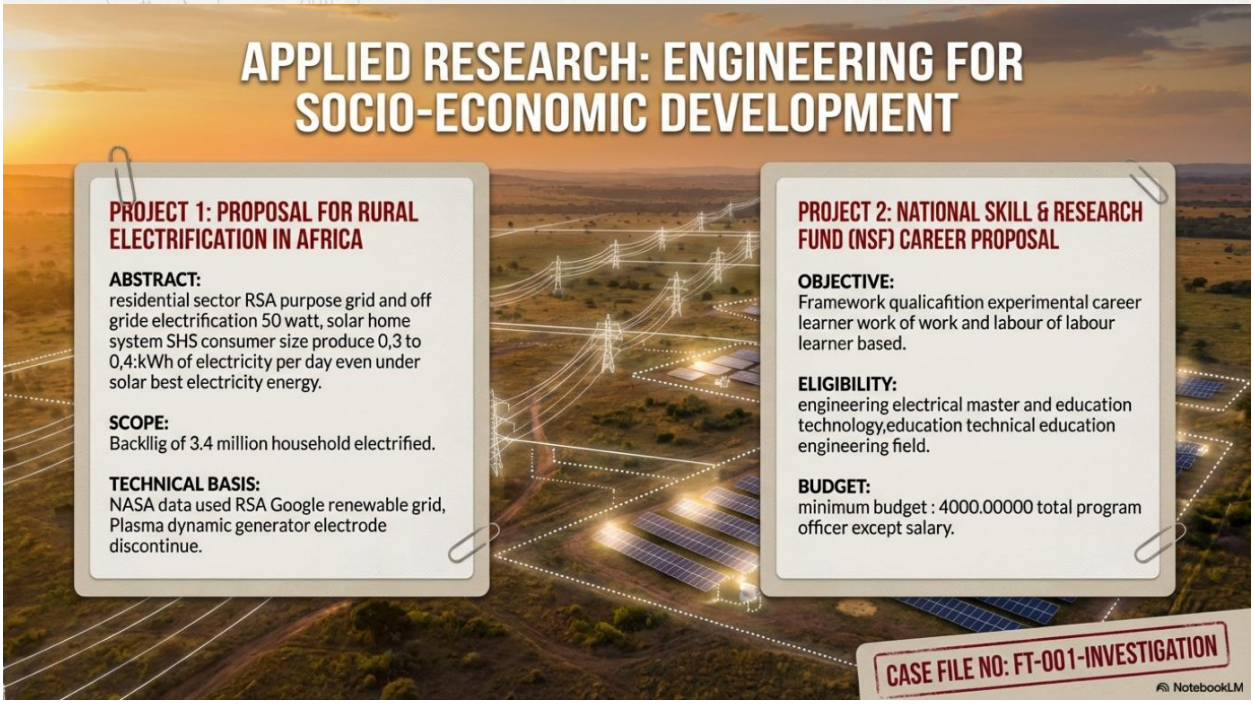
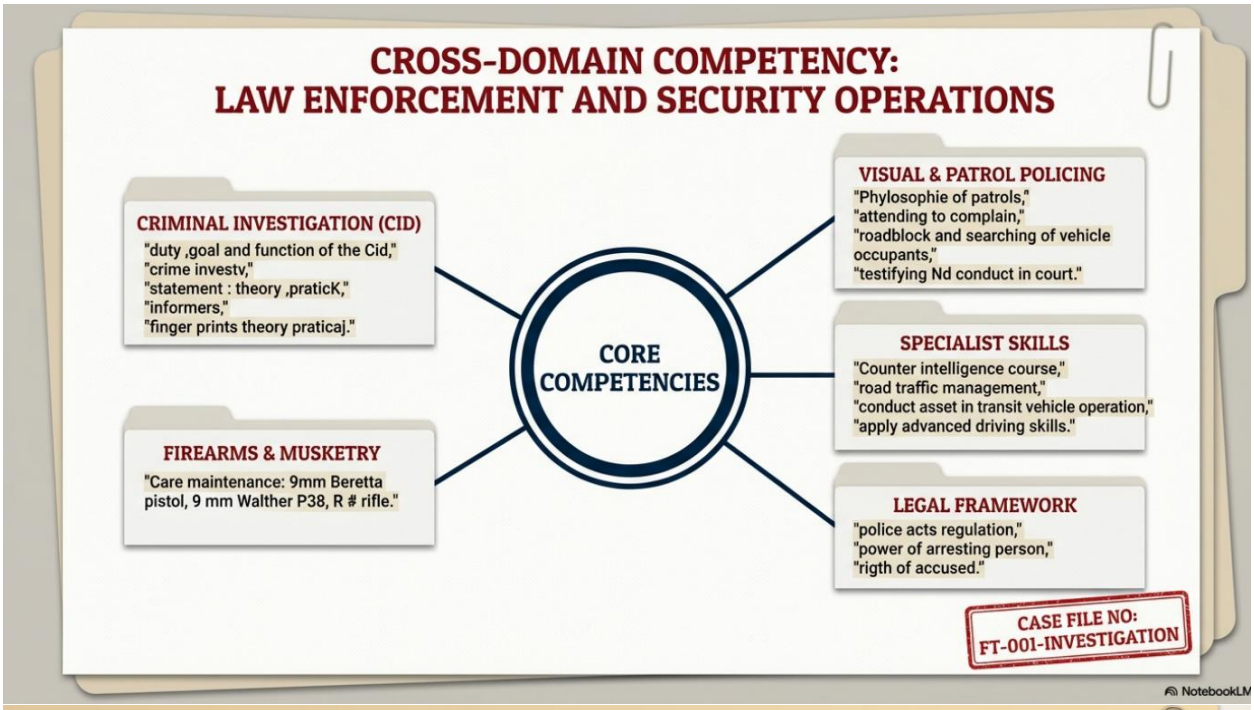


Exhibit A: The Technologist
Evidence of Profound Technical and Cross-Disciplinary Expertise.
NotebookLM


Deep Expertise in Electrical Engineering: Theory and Application
PLC
Power Systems & Grid Management
Power grid calculation: P= V× I× cos .flux, S= P+ jQ
Fault analysis: "calculation impedance of power source... fault at A(HV busbars)... fault at B LV base"
Load management: "Demand factor = maximum dem/ connected", "Load factor = average load / maximum load"
Instrumentation: "Landis and gyr trivestgor karh meter," "single phase induction watt hour meter"
Electronics & Control Systems
PLC Configuration: Schneider Electric Modicon PLC, Configuration ID: 607079d9-fa26-423a-9d8c-d810df173a87
Circuit Design: "panel wiring," "switchgears," "relay trip circuit"
Component Knowledge: "Peltier elements," "transformer voltage regulations," "synchronous machines"
Digital & Security Protocols
Network Security: "secure network programming," "ssl ,1.0,2.0 and 3.0," "TLS 1.0,,,TLS 1.1"
Cybersecurity concepts: "Renegoty attack," "dowgrade attack ,freak attack and log attack"
CASE FILE NO: FT-001-INVESTIGATION
NotebookLM


APPLIED RESEARCH: ENGINEERING FOR SOCIO-ECONOMIC DEVELOPMENT
PROJECT 1: PROPOSAL FOR RURAL ELECTRIFICATION IN AFRICA
ABSTRACT:
residential sector RSA purpose grid and off gride electrification 50 watt, solar home system SHS consumer size produce 0,3 to 0,4:kWh of electricity per day even under solar best electricity energy.
SCOPE:
Backllig of 3.4 million household electrified.
TECHNICAL BASIS:
NASA data used RSA Google renewable grid, Plasma dynamic generator electrode discontinue.
PROJECT 2: NATIONAL SKILL & RESEARCH FUND (NSF) CAREER PROPOSAL
OBJECTIVE:
Framework qualicafition experimental career learner work of work and labour of labour learner based.
ELIGIBILITY:
engineering electrical master and education technology,education technical education engineering field.
BUDGET:
minimum budget : 4000.00000 total program officer except salary.
CASE FILE NO: FT-001-INVESTIGATION
NotebookLM


CROSS-DOMAIN COMPETENCY:
LAW ENFORCEMENT AND SECURITY OPERATIONS
CRIMINAL INVESTIGATION (CID)
"duty ,goal and function of the Cid,"
"crime investv,"
"statement : theory ,praticK,"
"informers,"
"finger prints theory praticaj."
FIREARMS & MUSKETRY
"Care maintenance: 9mm Beretta pistol, 9 mm Walther P38, R # rifle."
CORE COMPETENCIES
VISUAL & PATROL POLICING
"Phylosophie of patrols,"
"attending to complain,"
"roadblock and searching of vehicle occupants,"
"testifying Nd conduct in court."
SPECIALIST SKILLS
"Counter intelligence course,"
"road traffic management,"
"conduct asset in transit vehicle operation,"
"apply advanced driving skills."
LEGAL FRAMEWORK
"police acts regulation,"
"power of arresting person,"
"rigth of accused."
CASE FILE NO: FT-001-INVESTIGATION
NotebookLM

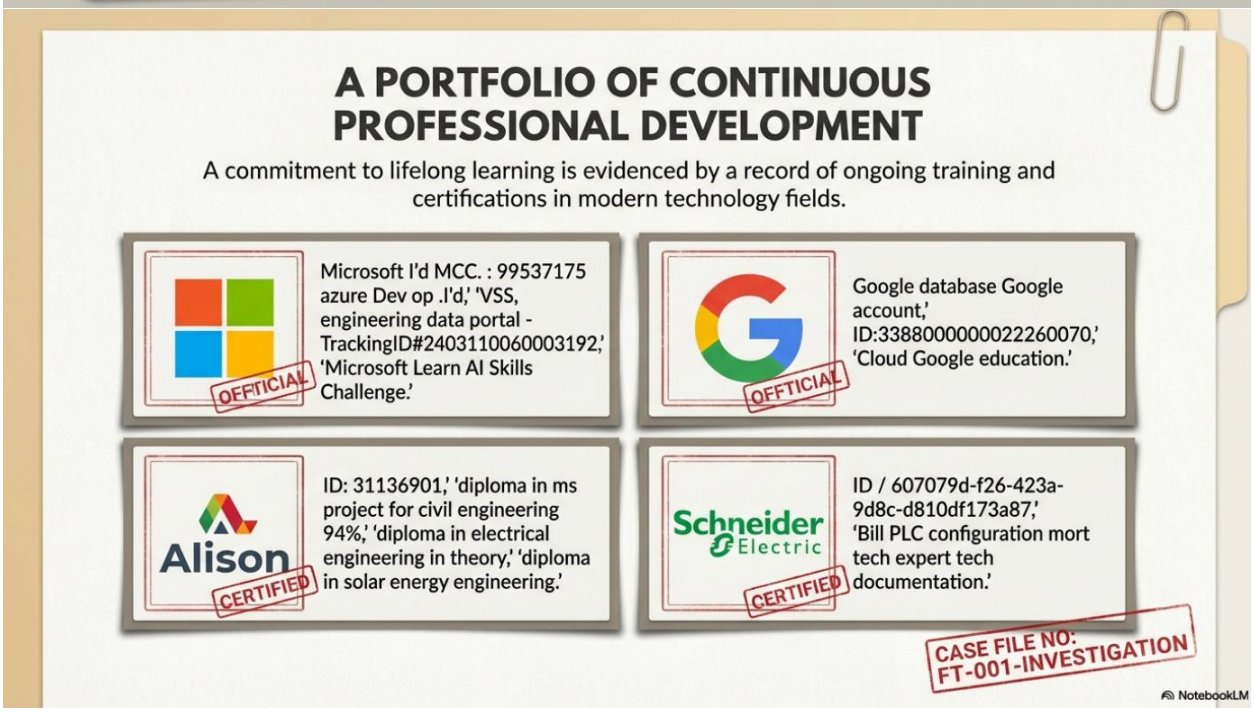

A PORTFOLIO OF CONTINUOUS PROFESSIONAL DEVELOPMENT
A commitment to lifelong learning is evidenced by a record of ongoing training and certifications in modern technology fields.
OFFFICIAL
Microsoft I'd MCC. : 99537175 azure Dev op .I'd,' 'VSS, engineering data portal - TrackingID#2403110060003192,' 'Microsoft Learn AI Skills Challenge.'
OFFTICIAL
Google database Google account,' ID:3388000000022260070,' 'Cloud Google education.'
Alison
CERTIFIED
ID: 31136901,' 'diploma in ms project for civil engineering 94%,' 'diploma in electrical engineering in theory,' 'diploma in solar energy engineering.'
Schneider Electric
CERTIFIED
ID / 607079d-f26-423a-9d8c-d810df173a87,' 'Bill PLC configuration mort tech expert tech documentation.'
CASE FILE NO: FT-001-INVESTIGATION
NotebookLM

EXHIBIT B:
THE LABYRINTH
Documenting the Navigation of Fractured and Unresponsive Systems.
CASE FILE NO: FT-001-INVESTIGATION
NotebookLM

A SYSTEMIC MAP OF INSTITUTIONAL ENGAGEMENT
SAQA
dhet
St Peace College
TVET Colleges South Africa
"Qualification Appeal"
"Employment Dispute"
Fiston Tshingombe
"Legal Complaint"
"Legal Complaint"
NOCADA SECURITY
City Power
Eskom
METROPOLITAN POLICE
Home Office
CCMA
PFA
Pension Funds Adjudicator
SAHRC
Bargaining Council
'complain provide fund trial court labour Ccma fund bargaining Levie Ccma vs tshingombe college matter dismissal skikk development job nated exam dhet complain...'
CASE FILE NO: FT-001-INVESTIGATION
NotebookLM

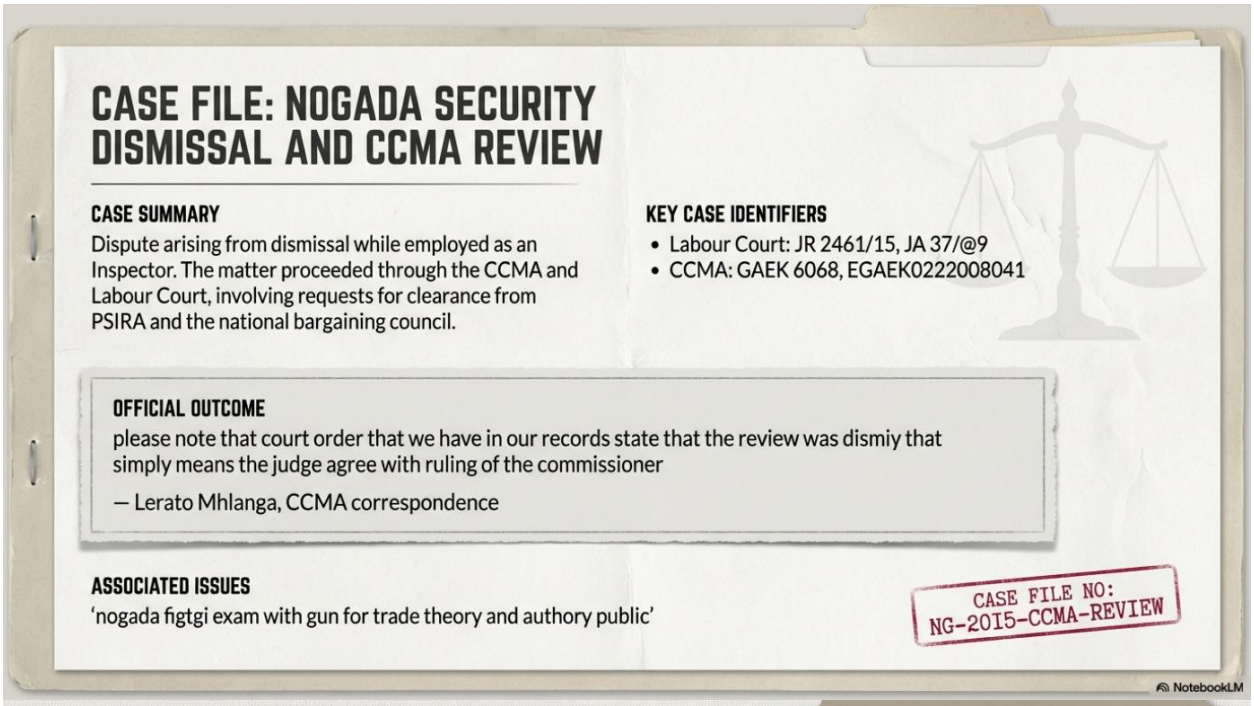
THE PROLONGED STRUGGLE FOR QUALIFICATION RECOGNITION AND ISSUANCE

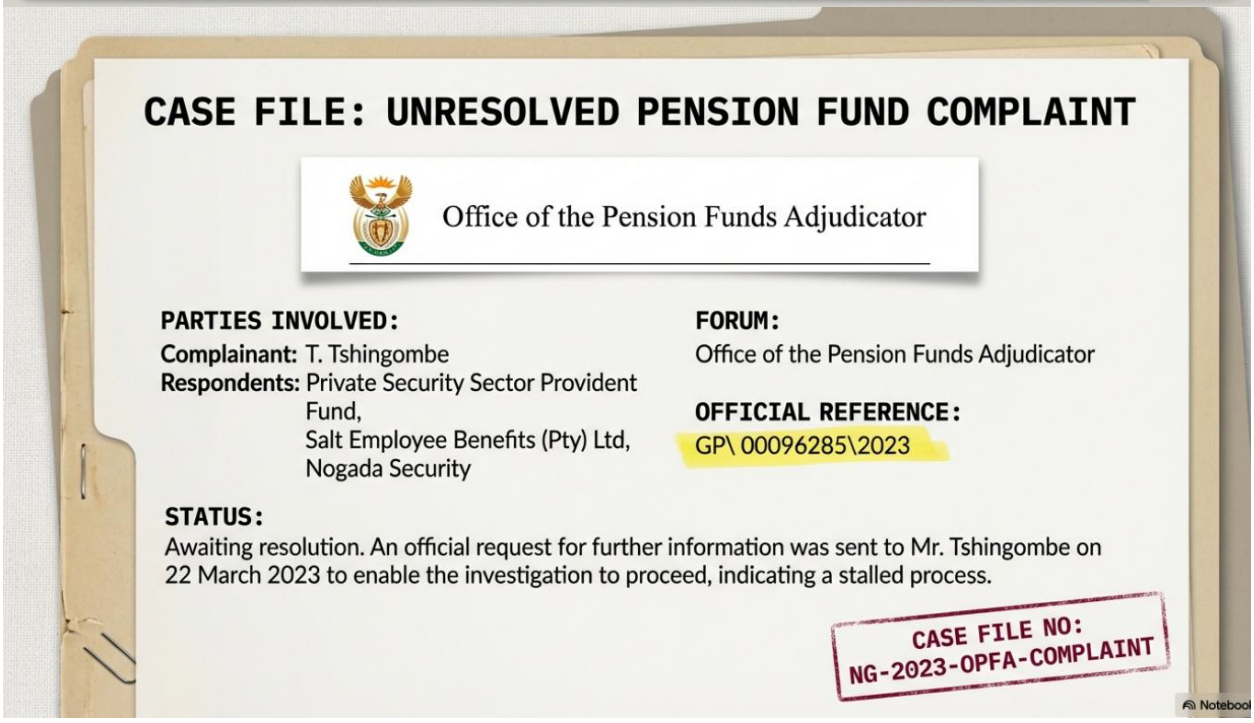
A multi-year effort to resolve examination and certification discrepancies for the National Diploma in Electrical Engineering (N1-N6). The evidence points to systemic failures in assessment, result processing, and diploma issuance.

EVIDENCE LOG	
ISSUE	**SUPPORTING DOCUMENTATION**
Allegation of examination irregularity.	"allegation irregularity letter," "statement sworn affidavit," "record transcription irregularity."
Formal complaints and appeals.	"incidence report resolve complain," "letter complain pratical experience appeal statei result award."
Systemic Failure: Lack of final certification.	"result 202311 release ,pass all subject letter qualificat," "no printed diploma."
Bureaucratic Impasse: Conflicting institutional responses.	"framework adaptative : management and educational high college no agree saqa official grade statement 1 the degree."

CASE FILE NO: FT-001-INVESTIGATION

NotebookLM


CASE FILE: NOGADA SECURITY DISMISSAL AND CCMA REVIEW
CASE SUMMARY
Dispute arising from dismissal while employed as an Inspector. The matter proceeded through the CCMA and Labour Court, involving requests for clearance from PSIRA and the national bargaining council.
KEY CASE IDENTIFIERS
• Labour Court: JR 2461/15, JA 37/@9
• CCMA: GAEK 6068, EGAEK0222008041
OFFICIAL OUTCOME
please note that court order that we have in our records state that the review was dismiy that simply means the judge agree with ruling of the commissioner
— Lerato Mhlanga, CCMA correspondence
ASSOCIATED ISSUES
'nogada figtgi exam with gun for trade theory and authory public'
CASE FILE NO: NG-2015-CCMA-REVIEW
NotebookLM


CASE FILE: UNRESOLVED PENSION FUND COMPLAINT
Office of the Pension Funds Adjudicator
PARTIES INVOLVED:
Complainant: T. Tshingombe
Respondents: Private Security Sector Provident Fund,
Salt Employee Benefits (Pty) Ltd,
Nogada Security
FORUM:
Office of the Pension Funds Adjudicator
OFFICIAL REFERENCE:
GP\ 00096285\2023
STATUS:
Awaiting resolution. An official request for further information was sent to Mr. Tshingombe on 22 March 2023 to enable the investigation to proceed, indicating a stalled process.
CASE FILE NO: NG-2023-OPFA-COMPLAINT

A PATTERN OF ENGAGEMENT MET WITH SYSTEMIC DEFLECTION

SOUTH AFRICAN HUMAN RIGHTS COMMISSION (SAHRC)

Action:
Submission of a formal complaint regarding labour rights.

Incident Date:
14/07/2023

Summary:
"rigth labour rigth argument. Mandatory public constitution low legislation rules matter rigth outcome."

SUBMISSION RECEIVED - SAHRC

UK METROPOLITAN POLICE

Action:
Multiple online submissions and a Freedom of Information (FOI) request.

Submission Ref:
`cnr - 50615-23-0100-00 (re: 'criminel ent exam time table cyber criminal hihg jack')`

FOI Ref:
`01/FOI/24/040452/M`

> "I have decided that in accordance with section 8 of the freedom of informat act 2000 act your enquiry is not consider a valid request... I am unable to ascertain what information you are seeking"

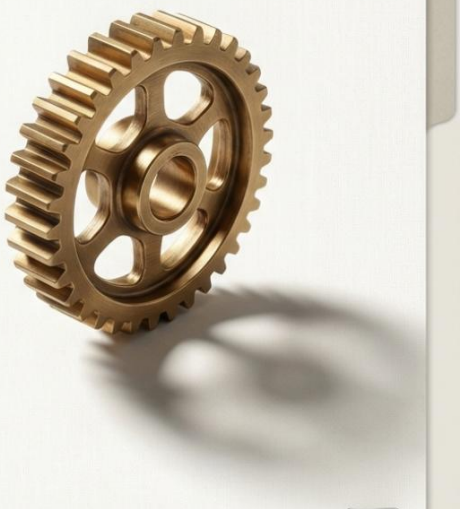
FOI REQUEST REJECTED - MET POLICE

NotebookLM

THE DOSSIER'S CONCLUSION: A CASE OF COMPOUNDED SYSTEMIC FAILURE

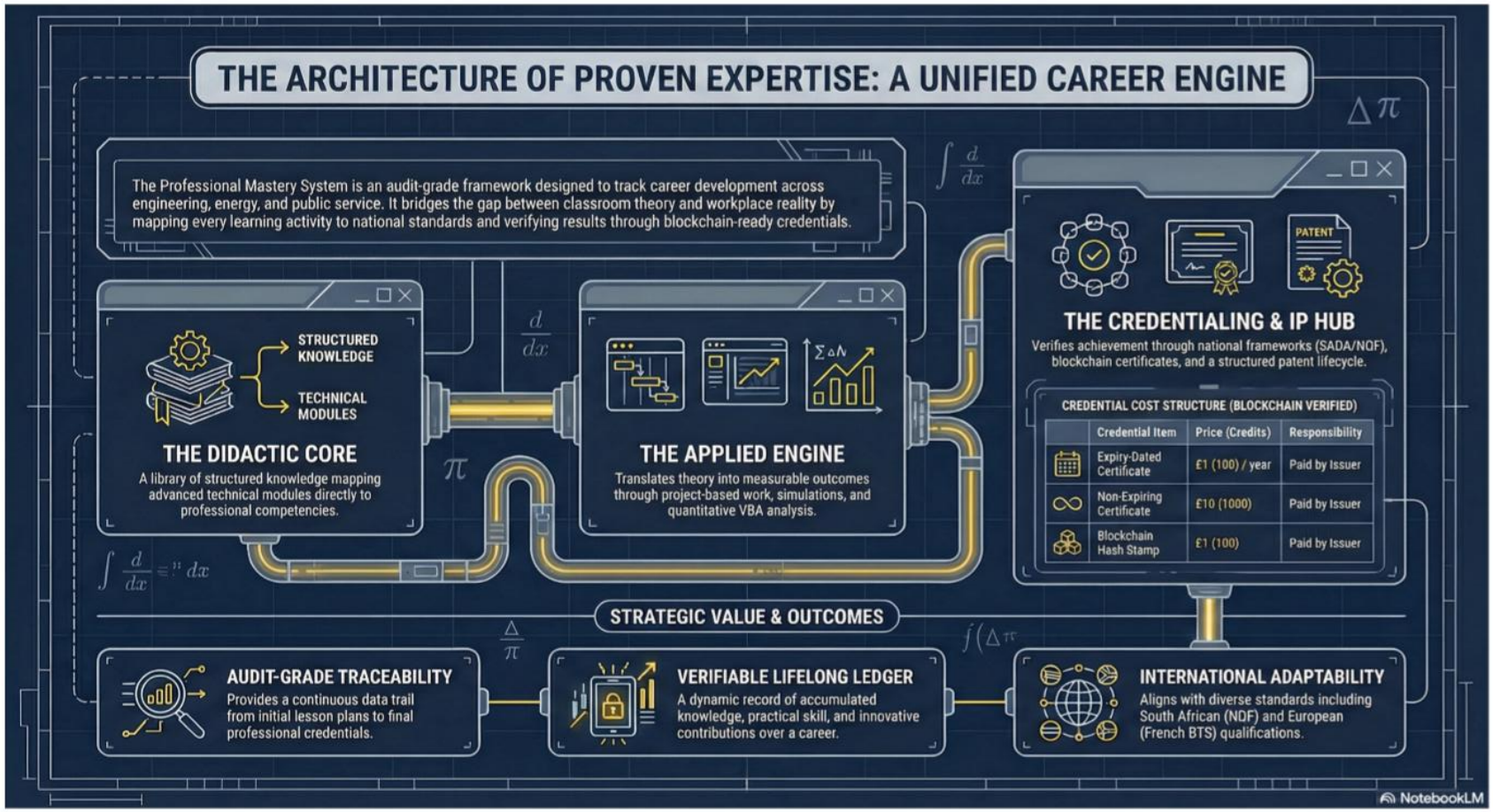
Synthesis of Evidence

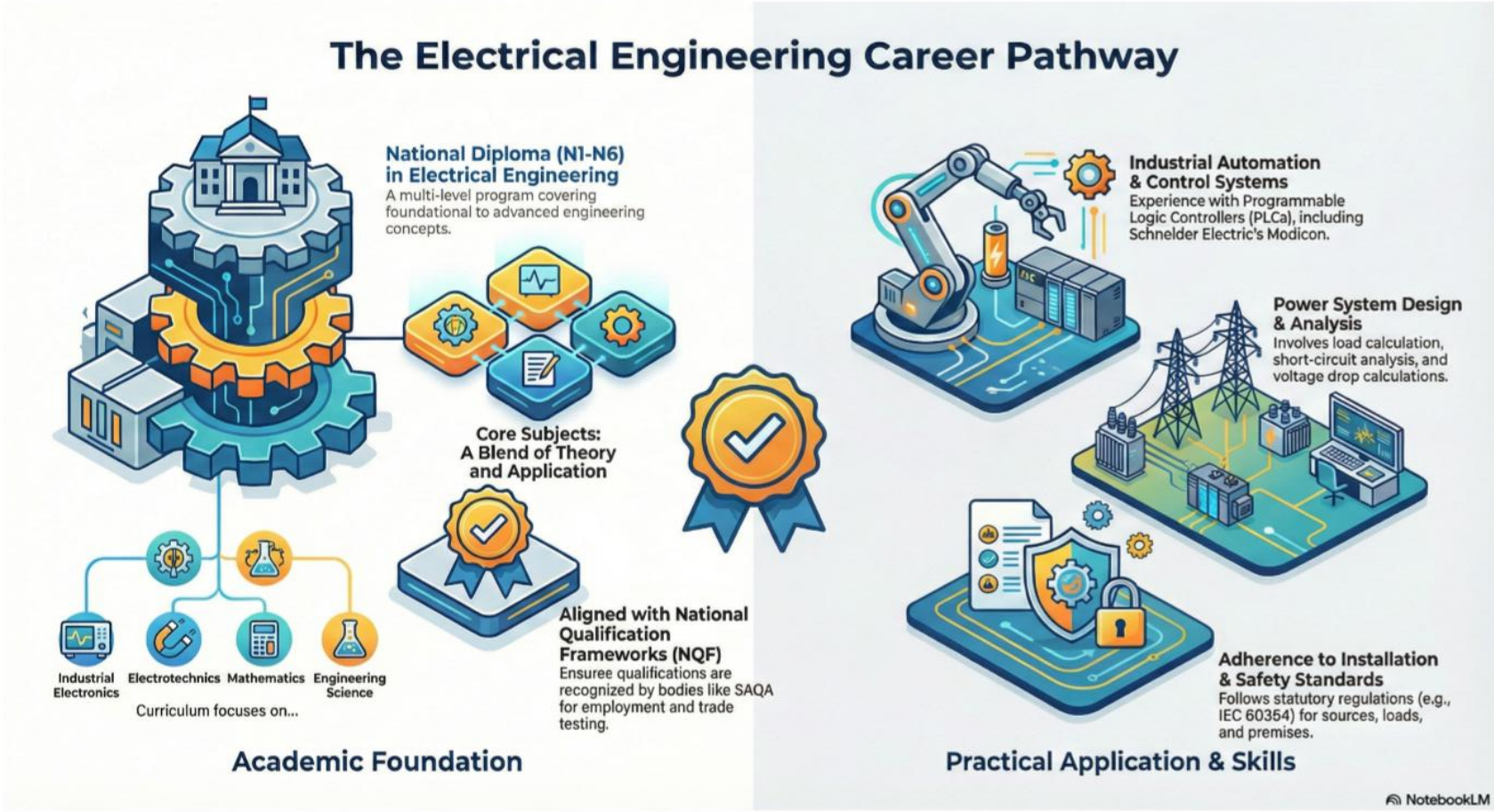
- The evidence establishes Mr. Tshingombe as a technologist with rare, deep, and verifiable expertise across multiple critical sectors **(Exhibit A)**.
- His pursuit of professional advancement has been systematically blocked by a labyrinth of disjointed, unresponsive educational and legal bodies **(Exhibit B)**.
- Specific, documented grievances, from employment disputes to qualification blockages, remain unresolved despite persistent, formal attempts at redress **(Exhibit C)**.



The Tshingombe Dossier is more than the story of one individual. It is a stark illustration of how systemic friction and institutional inertia can effectively neutralize highly qualified, motivated, and valuable human capital, at a significant cost to both the individual and society.

NotebookLM


THE ARCHITECTURE OF PROVEN EXPERTISE: A UNIFIED CAREER ENGINE
The Professional Mastery System is an audit-grade framework designed to track career development across engineering, energy, and public service. It bridges the gap between classroom theory and workplace reality by mapping every learning activity to national standards and verifying results through blockchain-ready credentials.
STRUCTURED KNOWLEDGE
TECHNICAL MODULES
THE DIDACTIC CORE
A library of structured knowledge mapping advanced technical modules directly to professional competencies.
THE APPLIED ENGINE
Translates theory into measurable outcomes through project-based work, simulations, and quantitative VBA analysis.
PATENT
THE CREDENTIALING & IP HUB
Verifies achievement through national frameworks (SADA/NQF), blockchain certificates, and a structured patent lifecycle.
CREDENTIAL COST STRUCTURE (BLOCKCHAIN VERIFIED)
Credential Item
Price (Credits)
Responsibility
Expiry-Dated Certificate
£1 (100) / year
Paid by Issuer
Non-Expiring Certificate
£10 (1000)
Paid by Issuer
Blockchain Hash Stamp
£1 (100)
Paid by Issuer
STRATEGIC VALUE & OUTCOMES
AUDIT-GRADE TRACEABILITY
Provides a continuous data trail from initial lesson plans to final professional credentials.
VERIFIABLE LIFELONG LEDGER
A dynamic record of accumulated knowledge, practical skill, and innovative contributions over a career.
INTERNATIONAL ADAPTABILITY
Aligns with diverse standards including South African (NQF) and European (French BTS) qualifications.
NotebookLM


The Electrical Engineering Career Pathway
National Diploma (N1-N6) in Electrical Engineering
A multi-level program covering foundational to advanced engineering concepts.
Core Subjects: A Blend of Theory and Application
Industrial Electronics
Electrotechnics
Mathematics
Engineering Science
Curriculum focuses on...
Aligned with National Qualification Frameworks (NQF)
Ensuree qualifications are recognized by bodies like SAQA for employment and trade testing.
Academic Foundation
Industrial Automation & Control Systems
Experience with Programmable Logic Controllers (PLCa), including Schnelder Electric's Modicon.
Power System Design & Analysis
Involves load calculation, short-circuit analysis, and voltage drop calculations.
Adherence to Installation & Safety Standards
Follows statutory regulations (e.g., IEC 60354) for sources, loads, and premises.
Practical Application & Skills
NotebookLM

Technology on the Front Lines: Engineering Solutions for Public Safety & Justice

MODERNIZING LAW ENFORCEMENT & LEGAL SYSTEMS

Developing Web-Based Crime Management Systems

To replace manual, paper-based processes for reporting and managing crime records.

Digitizing the Justice System

Managing legal cases like domestic violence protection orders through online applications.

Core Focus Areas for Police Modernization

Includes applied policing, crime resolution, traffic management, and community communication skills.

ENGINEERING SECURE INFRASTRUCTURE

Building Secure ATM Systems

Key components include a central processor, crypto-processor, and secure card reader.

Designing Three-Phase Smart Power Meters

Integrates MCUs, GPRS modules, and tamper detection for accurate and secure energy metering.

Automating Industrial Controls with PLCs

Involves programming commands to read from and write data to PLCs for system management.

NotebookLM